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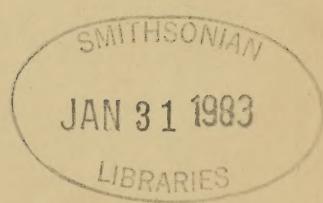
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THE WARBLER

SECOND SERIES

VOL. I. NO. I.



DENDROICA KIRTLANDI
(KIRTLAND'S WARBLER)

SMITHSONIAN

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The WARBLER



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JOHN LEWIS CHILDS, EDITOR

Plate I. Eggs of Kirtland's Warbler

THE TAKING OF THE TYPE SET, NEST AND FOUR EGGS OF *Dendroica kirtlandi* IN OSCODA CO., NORTHERN MICHIGAN, JUNE 15TH, 1904, BY EDWARD ARNOLD OF BATTLE CREEK.

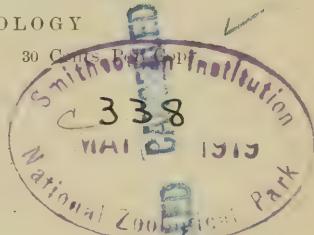
EARLY in June, 1903, Mr. E. H. Frothingham, an assistant in the Museum of the Michigan State University at Ann Arbor, with a friend, Mr. T. G. Gale, discovered a strange bird in Oscoda Co., Mich., near the Au Sable River, on "4 mile plains" north of the Au Sable.

Mr. Norman A. Wood, of Ann Arbor, who identified the skin as *Dendroica kirtlandi*, surmised that the bird was probably breeding near the locality and on June 29th, same year, started for Oscoda County to endeavor to land the coveted prize of a nest and eggs and to solve the great mystery of where this bird breeds. After a week's hard work Mr. Wood discovered a nest with young birds and an addled egg. For a full description of this very interesting article I will refer the reader to Vol. 5, No. 1, March, 1904, "Bulletin of the Michigan Ornithological Club."

I talked the matter of the breeding of this bird over very carefully with Mr. Wood and decided to make a trip to Oscoda County early in June, 1904, to aid in the possibility of finding a nest with eggs. I decided to take an assistant along to help in the search. We made the trip and arrived at our destination in good shape early in June.

On June 14th, 1904, I found a male in full song on the elevated Jack Pine Plains about one mile from the Au Sable River in Oscoda Co. The valley of the Au Sable at this place is about two miles wide, and the edge of the Jack Pine ridge is about one mile and a half from the river.

On June 15th, after a very diligent search, I located a singing male *D.*



The Warbler

kirtlandi, and after watching and listening to him all the morning, I saw him leave a Jack Pine tree and fly down into the grass, stay there a minute and fly back to the same tree. I at once went to the spot, flushed the female and discovered a beautiful nest and four fresh eggs. Both birds watched me and I had no trouble in taking them.

The nest was made of grasses and vines, was well hollowed and was embedded in the ground at the foot of a small oak tree surrounded by a thick circle of Jack Pines (*Pinus banksiana*) and a few White Pines (*Pinus strobus*). Nest measured 2 inches in diameter, $1\frac{1}{2}$ inches deep. Vegetation around it was very thick, Sweet Fern (*Comptonia asplenifolia*), Wintergreen (*Gaultheria procumbens*), and Bear Berry (*Arctostaphylos Uva-Ursi*), so nest was very well concealed. The female is a very close sitter and it is an easy matter to capture her on the nest as one can throw a hat over her.

The eggs are very handsome and all measure alike, 2 cent. x 15 to 16 mm. Color, white, heavily spotted and marked light brown.

The male is a very beautiful, loud, incessant singer and usually sings all day if the weather is cool; if hot there is a lull from 11 a. m. until about 4 p. m. The male has several songs, the predominating one as follows: *Ter-ter ter (ter ter-ter) ser-wit-er-we*—part enclosed faster than the rest, beginning of song low, rising after the first notes to the end. On a clear, favorable day the song can be distinctly heard at a distance of half a mile.

I put in nearly two weeks studying the song and nesting habits of this interesting bird. The male is not timid and will allow close observation, and on account of his loud song and beautiful plumage is very noticeable.

He seems to throw his whole energy into his song. I have watched one sing nearly half an hour incessantly. Usually he will sing for five minutes, they feed a little, hopping from the top to the bottom of the tree, sometimes to the ground for a minute, then back to the top of the tree to resume his beautiful song. In singing his head is well thrown back, his throat will swell out and the music seems to intoxicate him.

The female has a chipping note similar to a female Song Sparrow. Although I have watched several males for hours I have never seen one feed a female on a nest.

The male usually sings on a Jack Pine tree, sometimes on an Oak, and one male sang on the top of a dead White Pine at an elevation of about sixty feet. The bird will sing on the top branch and continue singing to the lowest branch, but never on the ground so far as my observations go.

This type set is now in the beautiful collection of Mr. John Lewis Childs, and as I dug out a goodly part of the sod with its surrounding vegetation and the nest and eggs in the centre with the two parents accompanying it, the group is, indeed, very interesting and unique.

For over a half century the breeding locality of *D. kirtlandi* has been a mystery. Michigan, a paradise for Warblers, has proved to be its

breeding place and summer home, and it will be well protected in 1905 by the Audubon Society and the game wardens of Michigan; so if collectors contemplate a trip there they will probably get into serious trouble if found by the game or deputy game wardens who will patrol the ground during the breeding period.

EDWARD ARNOLD

Battle Creek, Mich.

* * * *

A Unique Copy of Audubon's Birds of America

THE most superb copy of Audubon's Birds of America in existence has recently passed from the possession of the descendants of an intimate friend of Audubon, a gentleman with whom Audubon spent much time, and who, at the time of the production of his famous elephant folio edition of "The Birds of America," went abroad with him and gave him great moral and financial support which counted for much in bringing to a successful conclusion this mighty undertaking. As an expression of gratitude Audubon had a special copy of his work prepared for this friend. He selected each one of the 435 mammoth plates himself, (all with extra wide margins), and had them colored under his personal supervision and handsomely bound in four volumes. On the fly-leaf of the first volume of the text Audubon's presentation compliments appear over his own signature. This set has been preserved in perfect condition and is without a blemish. A well-known book-seller, who has handled and examined more sets of Audubon's work than any other living man, says of this set: "It is so far superior to all other copies I have seen as to bear no comparison."

The Editor of THE WARBLER is the fortunate and happy possessor of this matchless copy of the greatest Ornithological work ever issued.

* * * *

The Snowbirds

Which came the first, the birds or the snow?
Or was it together they fluttered down?
The spirits in white, who seem to know
And talk with the spirits in drab and brown?

And which are the merriest ones at play,
The flakes which dance to the tune of the breeze,
Or the birds which flutter and fly away,
And chatter and call from the nodding trees?

Frank H. Sweet, Va.

Notes on Some Adirondack Birds

By George Chahoon

OST of our Adirondack birds are migratory, passing their breeding season in summer with us, and then leaving for warmer climes. In addition to the climatic reasons for this migration the question of food supply is doubtless an important factor, for while they might stand the severity of our winters, the insectivorous birds could get no food when our ground was covered with snow and ice, and in proof of this, as a rule, the omnivorous migratory birds are the first to come in the spring and the last to leave in the fall.

In 1878 I began making notes of the arrival of the Robin, Blue Bird and Swallow; these notes have been made every spring, mostly by myself, but during my absence by some member of my family, and were all taken at Au Sable Forks. The earliest date for the Robin is March 10th, for the Blue Bird, March 7th and for the Swallow, April 4th. The latest date for the Robin is April 7th, for the Blue Bird, April 7th and for the Swallow, April 25th. The average date for the Robin, March 28th, Blue Bird, March 26th, and the Barn Swallow, April 15th.

In every year the first Robins to come are males, and this was true with the Blue Birds, excepting two years, when I saw both male and female birds on the same day. The sex of the Swallow is not easily determined, and I am not sure about them; and while I have no notes to which I can refer about other birds, my general observation has been that males come first and are followed in a few days by the females; and that the courtship and mating is all arranged after their arrival. My observations have been quite careful and I think they are full enough to go far towards establishing this fact. Of course, there will be exceptions and our observations are necessarily imperfect, for it is not probable that we happen to see the very first bird that comes.

THE ROBIN. (*Merula migratoria.*)

Owing to its numbers, the sweetness of its song, and the friendly familiarity of its habits, there is no bird more generally known or more universally liked than our common Robin. Every year he sings for us our praises to the coming spring from the tallest limb of the elm, and he hops across our lawn with a cuteness that forces a hearty welcome; and, differing from

most birds, he seems to be more numerous each year. In a few days his mate joins him and search for a site for their first nest begins. The Robin lays four eggs, and frequently raises three broods of young in a season, never so far as I know using the same site or the same nest twice in one season, and certainly never using the same nest or site for two consecutive broods. Year after year the same corner of the porch, the same crotch in the apple tree will be used as a nesting place by the Robin, and we have all wondered if the same Robins came back every year, or if the young birds returned and used the nest in which they were hatched. The birds look and act wonderfully familiar when the old site is occupied, and many people are sure they remember the birds from the year preceding. I have never seen a statement from any ornithologist throwing light on this interesting question, and I twice made an attempt to obtain the information for myself. As soon as the nest was occupied I made a slate trap and caught the old birds and cut off a toe on the left foot, and when the young were hatched I removed a toe from the right foot and by carefully smoothing some sand on the path I could easily recognize my birds by their tracks. This was done for two consecutive years, and the young, unfortunately, were eaten by cats before the time for their migration, but the old birds apparently lived to go South. The following spring the nests were occupied and I almost thought I recognized the birds, but "the footprints on the sand" told me they were not *my* birds. I confess to some disappointment, and if I were a poet, instead of a politician, I would state the result the other way. For in that event I would not be expected to confine myself so strictly to the truth!

Early one summer a female Robin, with two white wings and some white markings on the body, came to the yard of a neighbor of mine, but after staying about a week she disappeared.

One spring I found a male Robin hanging dead to the limb of an apple tree, and after taking him down found that he had swallowed about two feet of common cotton wrapping twine, and left about a foot hanging out of his mouth, and this protruding end became entangled in a limb, holding the bird until I found him.

All Thrushes, except the Robin, are mottled on the breast and the breast of the young Robin is mottled for the first season, so the young can be readily told from the old birds. The Robin is a great lover of angle worms and we have all been amused at seeing him pull worms from our lawns and tipping over backwards when the strain was relieved by the worms leaving the ground. The young follow the mother while she gathers the worms to feed them, and about the time for weaning the young birds I have frequently seen the mother bird pick up straws and sticks and offer them to her young instead of food. This may be done to discourage them from following her any longer, but I think it is more probably caused by a return of the nest building instinct to the mother.

The Warbler

THE HOUSE WREN. (*Troglodytes aedon.*)

Some years ago I put a small bird box on a post in our yard, which was soon occupied by a pair of summer Wrens, and all went nicely with them until a pair of English Sparrows concluded to drive the Wrens away and take the house for themselves, and for three or four days the Wrens and Sparrows were constantly fighting, but the Wrens finally won and held possession of the house, but at a great sacrifice, for after the fight was over I raised the lid of the box and found the young birds dead; the fight evidently taking so much of the time and attention of the old birds that they allowed their young to starve. It had been hard for me to resist using my shot gun on the Sparrows but I wanted to see the result of the contest. I removed the dead birds and in a short time the Wrens rebuilt the nest, and this time they closed the hole for entrance until it was scarcely large enough to admit my thumb. I believed that this was an intelligent design to prevent the entrance of the English Sparrow, but of course it may have been only an accident.

The box was occupied by Wrens for several years and the entrance was never closed afterwards, and I kept the Sparrows from any further interference. In this connection I would say that, at least so far as the English Sparrow is concerned, the male selects the site for the nest. When I shot the female the male soon returned with another mate, but when I shot the male the female did not return. The Wren builds a very coarse nest and fills the box nearly half full of sticks three or four inches long. As these sticks are carried in the birds' mouths by the middle, they would naturally strike the hole crosswise and could not enter, so when the birds get near the box they turn sideways and poke the sticks in, end first, following in and arranging them afterwards.

THE AMERICAN MEGANSER. (*Merganser americanus.*)

The Merganser is a fish duck nearly as large as our common domestic duck and is known under the names of Sheldrake and Saw-bill Duck. The male is considerably larger than the female, and has a jet black head and the black extends down the neck for about two inches where the color changes to a pure white, the line being as regular and distinct as the painting on the smoke stack of a steamship. The body is generally white with black markings on the wings and some black on the body, the breast is a beautiful salmon color when the bird is killed, but if mounted soon fades to a pure white. The male Merganser in full plumage is one of our most beautiful birds.

The female besides being smaller is of a greyish color and the plumage and general appearance is entirely unlike the male, so that the sex can be easily determined, even at a long distance.

The bird is common on Lake Champlain and waters of the Adiron-

dacks. Like all fish ducks it has a long, sharp bill which is serrated with saw-tooth shaped notches strongly suggesting teeth, and this fact has given this bird much interest to our evolutionary scientists, as a bird with teeth would be a connecting link between birds and mammals.

I have noticed a habit with this bird that I believe is entirely unique, and one I am surprised that our authorities on birds have not mentioned. That is that the males are entirely migratory and the females are not. After the lakes and still waters freeze, the Mergansers go to the rivers which are open in some places on the rapids all winter. For more than twenty years I have seen female Mergansers on the Au Sable River all winter, and I have frequently seen them on other Adirondack rivers, but I have never seen a male Merganser in winter, and in the late fall the males and females gather in separate flocks, and when the male Mergansers appear in the spring they are always in flocks by themselves. I realize that the statement of a habit so unusual as this should not be accepted as a fact except after careful observation, and I think that my observation justifies the statement, that at least on the Au Sable River, the male Merganser migrates and the female does not. On a hunting trip through the waters of Canada, north of Quebec, in the latter half of last October, my companion and I saw many small flocks of Mergansers, certainly more than a hundred birds, and they were all females. We concluded that the males had already gone South.

I think the Merganser lives entirely on fish, and it is surprising to one who has made no observations on the subject, to know what an enormous number of young fish a flock of these ducks will destroy in a season. I quote the following from my note book: "October 13th, 1882, killed fish duck (female Merganser) in Slush Pond and found in her throat and stomach, one pickerel, four black bass and eleven sunperch. Bob (my brother) present." "October 18th, 1882, killed same kind of duck on Lake Champlain and took out of her stomach sixty small perch. James R. Graves present."

About this time Mr. Charles T. Richardson, of Au Sable Forks, killed a male Merganser, which he skinned for the purpose of mounting, and he found an arrow head encysted in its breast. The arrow head was about an inch and a quarter long, and was evidently made of hoop iron. I saw the duck and the arrow shortly after its removal. Mr. Richardson sent the arrow and an account of his finding it to *Forest and Stream*.

Mr. Richardson and I thought it probable that the arrow was shot into the duck by some Indian while the duck was on its nesting ground in the far North. Against this supposition is the fact that Mergansers nest every season on our waters, which would indicate that they do not go to the far North.

While driving near my home a few summers ago, I met a boy with an old shot gun and asked him what he was trying to kill, and told him that it

was not the season for shooting. He said he was trying to get a King Bird, that his sister was very sick with heart disease and that if she would eat the uncooked heart of a King Bird it would cure her. Of course, being a layman, I advanced no opinion on the efficacy of the remedy.

RUFFED GROUSE. (*Bonasa umbellus.*)

Our most valued game bird is the Partridge or Ruffed Grouse. He stays with us all the time, and when he comes hot from the broiling iron he is truly "a dish to set before the King." He is a strong, swift flyer, and taxes the nerves and skill of the sportsman to a high degree, and to bring down a Partridge under full wing in the evergreens in November sends a thrill of delight through one's veins.

The Grouse is a gallinaceous bird, and the young leave the nest as soon as hatched, running around with the mother like chickens. Upon the approach of danger the young hide themselves under the leaves in an incredibly short time, and the mother flutters off with an apparently broken wing, keeping just out of reach to lure you away from the hiding place of her young.

This rule is employed by many birds, but none, so far as I know, to as large an extent as the Ruffed Grouse.

Naturally a very timid bird, the Grouse will put up quite a bluff for a fight in defense of her young, and on two occasions I knew a Grouse to show fight without any young. One fall, when attending a fire in the woods, a Grouse, maddened by the fire and smoke, followed me for nearly a hundred yards with its feathers reversed, and acting like a hen with chickens chasing a dog. On another occasion I brought down a Grouse with a broken wing, and my setter trailed it until its progress was stopped by a fallen tree, and when I got to my dog I found the Grouse marching in front of the dog trying to scare him.

Experience has satisfied me that a Grouse knows enough to try and get a tree between himself and the huntsman and to keep it there until he is out of range.

Grouse are less numerous around my home than they were twenty years ago and their habits have undergone a very decided change. Then he usually took to a tree when flushed, now he seldom trees and he takes much longer flights. When hunting in Canada this fall I found that the Grouse were very tame and simply ran away from me, or if pressed flew into trees nearby and waited for their heads to be taken off with rifle balls.

I understand that in Pennsylvania, Massachusetts and places where the Grouse has been hunted for a longer time than here it seldom or never trees. The increased wildness may be accounted for by the simple fact of their being hunted, but this will hardly account for their change of habit about treeing. I think this must be accounted for by natural selection or survival

of the fittest. Before man appeared upon the scene with his shot gun, the natural enemy of the Grouse was the fox, and as soon as he hopped up on a tree the bird could laugh at the fox, but when man came the result was reversed, and the bird that flew into the tree was the bird that was killed. It is now generally admitted that there is a tendency in the offspring to inherit the peculiarities of the parents. When the foxes were the enemies the birds that lighted on the ground were the birds that were caught, and the birds that treed were the birds that lived to become parents of another generation; but when man came this was reversed, and the birds that lighted on the ground were the ones left to become parents. Continuing this by killing the birds that lighted in the trees and letting those that lighted on the ground escape, an hereditary tendency to light on the ground would surely be developed. This seems to be sound in theory and the result is clearly sustained by observation.

I noticed considerable difference in the shade coloring of the Grouse, some being darker than others but all have the same markings. On September 8th, 1890, my son killed a Grouse near Au Sable Forks on which the three outer feathers of both wings were white.

The Grouse is omnivorous, and like man and the pig, he eats almost everything. In the winter he lives upon the buds of trees, and many a bird has lost his life while filling his crop from this source, as he is then an easy mark for the hunter. I have seen his tracks and the marks of his bill on the frozen carcass of our domestic animals. He is fond of blackberries, and sportsmen often visit blackberry patches when looking for him in the early fall, but I have been surprised to find that when feeding in a blackberry patch he apparently shows no preference for the ripe berries, filling his crop with all kinds, the very young or green colored, the more mature or red colored, and the ripe, and this when the ripe berries are so plenty that he would have no trouble in getting them if he so desired.

I have never known any bird to eat the wintergreen berry and I am at a loss for the reason.

The purple clematis is rare around Au Sable Forks. One spring while trout fishing with my brother we found a beautiful vine in full bloom and when going to it saw that it covered a Grouse nest filled with eggs. It was hard to believe that a sense of the beautiful had not induced the bird to select this particular spot for its nest.

A fact about the Grouse which I find is not generally known is, while in summer its toes are plain like the toes of a chicken, in the winter they are bordered with a stiff hairy fringe that gives it support on the snow, having the same effect as the meshes of our snow shoes. I discovered this some years ago by noticing their tracks.

This is a fact of considerable interest, for it seems to have a bearing upon the theory that there is a tendency in animals to develop conditions

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favorable to their environment. Under this theory one might hope to find a development of a substitute for a snow shoe on a non-migratory bird whose habits keep it largely upon the ground, while no such development would be expected on a bird that leaves us in the winter for warmer climes.

This is the only instance that I know of where an animal of any kind grows a special arrangement in the fall for walking on snow.

The rabbit has a foot well adapted to this purpose, but it is the same, winter and summer. Most animals put on a better skin protection for winter, and some change color, being whiter in winter than summer, but the Grouse alone, so far as I know, puts on snow shoes in the fall and takes them off in the spring.

AMERICAN GOLDFINCH. (*Astragalinus tristis.*)

But few of our native birds change the color of their plumage as an adaptation to the season, but our pretty Thistle Bird, or American Goldfinch, undergoes a radical change. In summer he has a bright yellow body with black markings and a black head, while in winter his plumage is all pale brown or sparrow color, and we often fail to recognize in our sombre winter residents the brilliant Goldfinch of our summer. These little birds are gregarious in the winter and as they fly in small flocks into the trees by the roadside they are frequently mistaken for Sparrows, and in fact are usually called Tree Sparrows.

There are few things connected with the study of natural history more interesting than the tendency in animals to develop conditions suitable to their environments, and it is surprising to see for how long a time an acquired habit will sometimes survive after its usefulness has ceased. You have all noticed that a dog turns around several times before laying down. Naturalists tell us that this is a survival of the practice of his forefathers to prepare a bed for themselves in the tall grass; and since the dog was one of the first animals domesticated by man, this must be a survival from a time counted by centuries. Other habits must have been surrendered and new ones acquired, in a comparatively short time.

CHIMNEY SWIFT. (*Chaetura pelagica.*)

The common Chimney Swallows always build their nests in chimneys that are unused during their breeding season. They make a semicircular nest of sticks which they glue to the inside wall of the chimney with a secretion from their mouths. It is interesting to see the Swallows gather the sticks for their nests, for they do not alight on the ground, but while flying break off dead twigs from trees without stopping in their flight.

This habit of building in chimneys must have been acquired in a comparatively short time, for there were no chimneys in this country before the arrival of the white man, and for a long time afterwards the settler had but

one chimney in his house which must have been used, at least for cooking purposes, in the summer. So perfect is this habit that the Swallow looks and acts as though he were made for the chimney ; his color is a sooty-black, so that he does not tarnish his coat by rubbing against the chimney walls, the feathers of his tail end in hard spikes, that he can use them to brace himself against the wall.

I have been interested on a summer evening watching these Swallows in hundreds circling around a church chimney in Plattsburgh, until finally the birds in the center began to enter the chimney, the circle growing smaller and smaller as they apparently poured down in the vortex of a whirlpool of Swallows.

CLIFF SWALLOW. (*Petrochelidon lunifrons.*)

The Cliff Swallows always place their nests under the eaves or cornices of some building, usually a barn, and this habit must have been acquired since the white man came to this country. These nests are built of mud gathered by the birds from wet places on the ground, and carried in their mouths to the sites chosen by them. Many of our farmers have an unkind feeling for the Cliff Swallows, as they think the mud-daubed nests on the new red paint is not an artistic addition ; but if our cattle could give an intelligent opinion they would welcome the birds, for all the Swallows are entirely insectivorous, and they must eat many flies and mosquitoes that otherwise would be left to torment the animals.

The secretion used by the Swallows in cementing their nests, is the article so highly prized by the Orientals, and from which they make their celebrated bird's-nest soup. The bird-nest Swallows of China build in caves, and their secretion is white, not black, as with our Chimney Swallows, but I understand that chemists find little if any difference in the substance.

Birds that build in inaccessible places seem to rely upon that for security and apparently make little effort to conceal their nests, while those building on or near the ground are generally careful to hide them, and they display considerable cunning in preventing discovery. Robins, for instance, after the young are hatched, never drop the eggshells over the side of the nests to the ground where they would attract attention and cause one to look directly overhead and thus find the nest, but take the broken shells in their bills and carry them off, dropping them while flying.

Frequently, birds are very shy and easily frightened away from their nests, but after they are well established they sometimes show a good deal of tenacity in staying by their houses until the young are ready to leave it.

PHŒBE. (*Sayornis phœbe.*)

Some years ago we opened an old ore mine where a pair of Phœbe birds had placed their nest on a shelf a few feet overhead, a projecting rock protecting it from the flying stones of the blasts that were fired several times a

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day, and the men were working so near that they could almost touch it with their hands. These birds did not desert their nest until the young were old enough to leave. The site was not used the following year as is usually the case with the Phœbe.

The instinct of sitting to hatch the young from the eggs is very interesting and it would be curious to learn how it originated.

Doubtless the first birds followed the practice of their progenitors, the reptiles, and laid their eggs in the warm sand, leaving them for the sun to hatch, and when chance led the hen to cover the nest, the eggs hatched more quickly; and by protecting them from the cold night air and the rains they hatched more surely, and fewer eggs failed. In this way a tendency to sit on the eggs may have been developed. However that may be, the instinct is now well established and is very strong and seems to be sometimes used with but little judgment. I have never experimented with our wild birds, but the domestic hen will sit as surely, as faithfully, and for as long a time on an empty nest as on one filled with eggs, and where nests are in boxes adjoining each other, the hen, after going off for food, frequently goes back into another box, leaving her eggs to get cold and spoil. The temperature of birds is normally higher than it is in mammals, and during the sitting period it is abnormally raised.

THE BLUEBIRD. (*Sialia sialis.*)

No bird has wormed himself into our affections more deeply than the Bluebird. He charms us as he flits through the air like a painted arrow, reflecting the sunlight from the metallic lustre of his wings, while he pours out his inspired song "in notes as sweet as angels' greetings when they meet." He seems to have stolen the music from the lyre of Orpheus when he stilled the tortures of the damned for his beloved wife in Hades. He comes to us before the unfolding of the first bud of spring, sings to us until our hills and mountains are covered with the richness of their summer verdure and stays with us until the bitter frosts of winter change this verdure to all the beauty of its autumnal glory.

Fifteen years ago I noticed our Bluebirds were gradually though steadily decreasing in numbers, but am glad to say that they are now regaining their former abundance.

WILD PIGEON. (*Ectopistes migratorius.*)

Forty years ago the Wild Pigeons were quite plenty in the fall of the year in this part of our state, but each fall they came in decreasing numbers, and for the last twenty or thirty years I have not seen a single bird. The modern shot gun and fixed ammunition has been too much for the Pigeon and I fear that he has gone from us never to return.

HERMIT THRUSH. (*Hylocichla guttata pallasii.*)

There is no sweeter songster than the shy Hermit Thrush, and I am

much pleased, believing that his numbers are increasing. In former years they were not often heard; now, as our spring afternoons decline into twilight, their charming notes may be heard from almost every suitable point.

TURTLE DOVE. (*Zenaidura macroura.*)

For the first eight or ten years of my residence in Au Sable Forks I did not see a Turtle Dove, and now I see them every summer.

GOLDEN EAGLE. (*Aquila chrysætos.*)

Our American Eagle is occasionally seen in the Adirondacks and some years ago a large female Golden Eagle was caught in a steel trap near my home and came into my possession, where she occupied a slatted hen-coop, and whenever curiosity led a hen to poke her nose through the slats her head was taken off very quickly. The Eagle would grasp the bird with her claws and attempt to pull her into the coop, and when the body would not come, the head came off, the body falling on the ground outside. I finally presented her to the zoological gardens in Central Park.

WOODCOCK. (*Philohela minor.*)

In birds of prey the female is the larger and finer specimen, while the reverse is true with most other birds, but there is a striking exception in the noble Woodcock. No bird is held in higher appreciation by the sportsman than this, and an adult Woodcock in full plumage is as rich in coloring and as beautiful in marking as any bird I know. He lies well for the dog, is rare sport for the gunner, and has no equal for the palate. He nests in our alder thickets or on wet, marshy ground, and around my home it is the work of a man to get him. He is nocturnal in his habits, feeding at night and pushing his long, slender bill into the soft ground, leaving holes that to the casual eye look like worm holes, but which are easily recognized by one familiar with his habits. I have noticed one singular peculiarity of his striking telegraph wires and killing himself in his flights. I have known of at least half a dozen Woodcock killed this way, but never of any other bird.

THE COWBIRD. (*Molothrus ater.*)

Cow Blackbirds are common to this locality during the summers, and they are found in our pastures with the cattle. I have never found their eggs in the nests of other birds, but they are mormonistic in their habits.

THE CROW. (*Corvus americana.*)

Some years ago an article went the rounds of the newspapers telling of a man catching a flock of Crows by soaking corn in alcohol and leaving it for them to eat and when they became drunk he caught them. I tried bread crumbs soaked in whisky on English Sparrows, but they would not eat it, and I finally got a Crow and though I kept him until he was very hungry, I could not get him to eat corn soaked in whiskey, and he found no

difficulty in picking up every unsoaked kernel and leaving the others. You may draw your own moral, but I am satisfied that the Crow will not eat food saturated with alcohol. He is either too uncivilized or too intelligent!

Orioles and other birds sometimes give us much annoyance by eating the green peas from our garden, and except in the case of English Sparrows we do not like to shoot them. I once killed a Hawk and roughly stuffed it with straw, putting it on a pole near my pea vines, where the birds collected in quantities to scold and peck at it; but they were afraid to touch the peas, and finally left mine for those of my neighbor across the street.

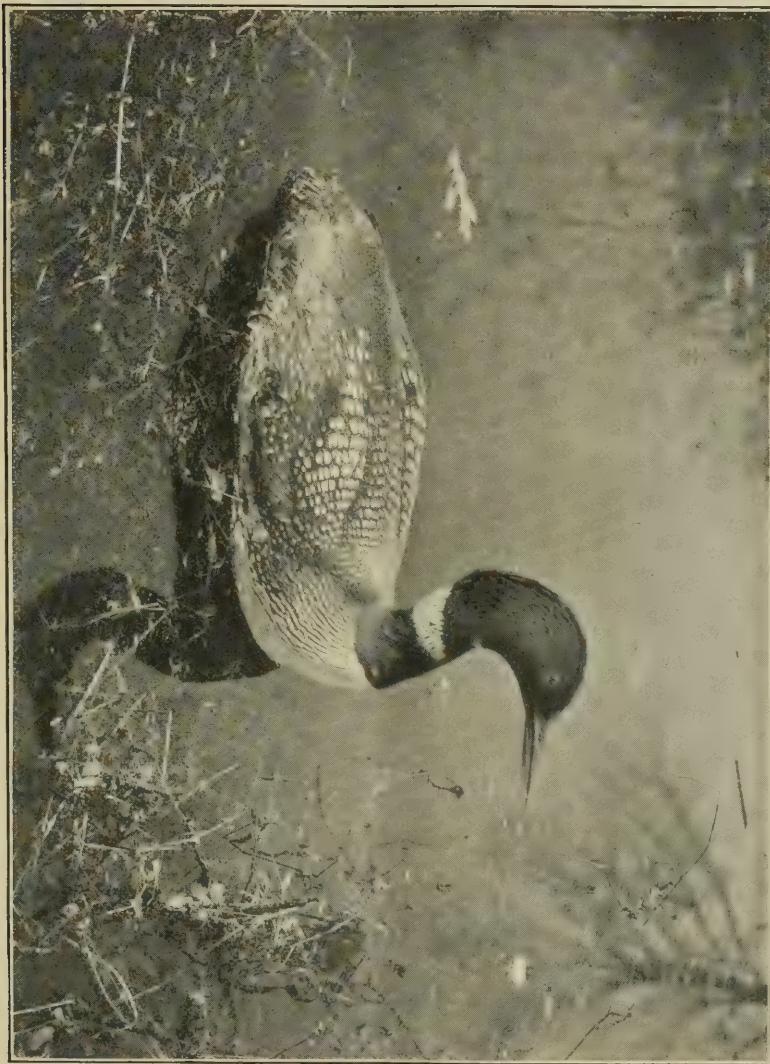
ACADIAN OWL. (*Nyctala acadia.*)

The Acadian Owl is a pretty, cunning-looking little bird, not much larger than a Robin. He is the smallest of our Eastern Owls, and quite tame, and is not often seen around my home. Some two years ago, while hunting with my brother, we saw one of these little birds on the limb of a tree not far from the ground, and we concluded to try to snare him. We cut a long pole and made a slip noose with a shoe string, and while my brother kept the Owl's attention by standing in front of him, I slipped the noose over his head from behind. When we had the Owl we wanted to tie him, and since we could not spare the shoe string for that purpose, my brother decided to tie him with his watch chain. He snapped the catch around one leg, and while trying to fasten the other leg the Owl made a flutter and got loose, and the last we saw of him, he was sailing over the tops of the trees with the watch chain hanging to his leg. My brother made a remark that I have failed to notice in the Sunday school books, and I laughed.

I have always taken an interest in birds because I have loved them, but it does not follow that I know much about them. Some one said that the more we know men the less we love them, but that man was an old cynic and doubtless told an untruth. Certain it is that the more we know our native birds the more we love them, and it is one of the encouraging signs of the day that it has become fashionable for young people to take an increasing interest in the birds and wild flowers of their own country, and a young person would hardly be considered accomplished to-day who is entirely ignorant of at least the common names of the flowers that bloom in our fields and woods, and the birds that pour out their ecstatic music from our trees and hedges.

Travelers tell us the maidens of India light tiny candles and put them on little chips and set them afloat upon the river Ganges to carry messages of love to their dear ones far away; and the songs of the birds come to us so sweet and pure that they seem to bring messages of love to *us* from *our* loved ones far away.

THE LOON (*Gavia immer*) IN ADIRONDACK WATERS



Feeding a Baby Hummingbird

I WONDER if any of the readers of THE WARBLER ever enjoyed the privilege of giving a baby Hummingbird his breakfast?

As I walked down the shrub-bordered path, one July morning, my eye lighted on a gray speck on a branch of the bridal wreath, which, upon closer inspection, proved to be a baby Hummingbird. I touched it gently, but, for a moment, was undecided if it were alive, although its feet were tightly clinched on the twig. It neither moved nor opened its eyes, although I visited it several times in the following hour and a half, until I began to feel anxious for the baby sitting there in the rain.

At last he opened his bill, with a little squeak, and I decided that the rain had chilled him and that he was too weak to go in search of a breakfast. Thinking this a fine opportunity to play fairy godmother, I made some strong sweetened water, and again visited the shrubbery. He allowed me to handle him, examining the bronze-green of his back, and the gray-green of his vest, and then I dropped a little of the water on his bill, which he swallowed, opening his eyes and his bill at the same time. Then I held the spoon up, and he ran his bill up into the bowl, and then shot out a slender tongue fully half an inch beyond his bill, and drank eagerly.

He was so hungry I was almost afraid he would eat too much, but he opened his eyes and brightened all over, and after I left him, flew away, and went searching for honey in the scarlet blossoms of the tree cypress. The next day I saw him sitting on the same spot, but he would not allow me to approach near enough to touch him.

On the first day of September we had a light shower, the first for twelve days, and the birds went nearly mad with joy. I sat by the window during the morning and watched a Hummingbird taking his bath. As a preliminary he alighted on a morning-glory vine and held up his bill to catch the drops. Then he fluttered his wings, and lightened up his feathers so that the water could reach his body. There he sat for fully ten minutes enjoying his bath and unconscious of observers, and finally, lifting his wings, flew toward the flower screen and plunged his bill into the scarlet blossoms awaiting him.

Ina Lord McDavitt, N.J.

THE WARBLER

SECOND SERIES

VOL.I. NO 2



DENDROICA OLIVACEA
(OLIVE WARBLER)



OLIVE WARBLER (*Dendroica olivacea*)

Plate II. Eggs of the Olive Warbler
(*Dendroica olivacea*)

THE set of Olive Warbler here figured is the one in my private collection, and one of the two or three sets of this species that have thus far been taken. It was collected by O. W. Howard June 7, 1897, in the Huachuca Mountains of Arizona, at an altitude of 9,200 feet. The set originally contained four eggs, but one was broken in blowing, as they were heavily incubated. The plate shows the exact size and color, but the color may be described as a grayish white with bluish tinge, thickly covered with blackish spots and mottlings. (Size 18 to 19 x 14 to 16 mm.) The female bird was taken together with the nest and both are shown in the accompanying illustration, to which a male bird in perfect plumage has been added to complete the group. The nest was found in a dense thicket of red spruce 25 feet from the ground in a forked limb. It is a very beautiful structure composed of fine rootlets and bark fibre, lined with plant down and covered with lichens, after the manner of the Blue-gray Gnatcatcher, and as a specimen of bird-nest architecture it is as complete, as perfect and as skillfully made as a nest of the Ruby-throated Hummingbird.

H. S. Swarth gives a good account of the Olive Warbler in his recent and valuable work entitled "Birds of the Huachuca Mountains." Probably the best description of the Olive Warbler is found in Coue's Key to North American Birds, volume I, page 318.



HOME OF THE ALAMEDA SONG SPARROW

W. H. Jackson

The Alameda Song Sparrow

Though the marshes be so lowly,
Where you love to flit and sing,
Still, I sometimes think them holy,
Such sweet melodies you bring !

Tell me, tell me, gentle singer,
Always dress'd in suit so plain,
Is your cheery mission earthward
Just to minister to pain ?

ACHEERY little bird, and one always delightfully associated in my mind with many pleasant rambles over the marshes, or cruising about through winding sloughs, where the California Clapper Rail (*Rallus obsoletus*) is found at home, is our happy little friend, the Alameda Sparrow (*Melospiza cinerea pusillula*), who, in spite of his long Latin name, seems to have not a care in the world. In the rank fens and waste of marsh the dreariness is relieved by the bright little song, a cheerful thanksgiving note ever, of the Song Sparrow.

The beautiful photograph here reproduced, which was taken by Mr. Edgar Cohen, a well known amateur photographer of Alameda, Cal., and used with his kind permission, shows a portion of our "Island City" at high tide, where in years past I have looked into many nests of the Alameda Sparrow, built cozily from five inches to a foot above ground in a low bushy weed found growing on the marshes contiguous to Alameda on San Francisco Bay. That the low tree-like weeds are used by the Sparrows for nest-sites in the locality pictured is seen to be with good reason, for on a flood tide nests built upon the ground, as many of the Alameda Sparrows' are, would prove to be houses with damp and unhealthy cellars. Provident Alameda Sparrows, who know the marshes better than we do (for it is their world) and are familiar with the phenomena of the tides which effect their life, learn to be wise builders.

The nests of the Alameda Sparrow, at least such as I have observed near Alameda, are nearly all decidedly "marshy" in the material used, which, for the outer walls and foundation, is composed of stems of marsh grass, which are always encrusted with dry mud or salt, giving them a somewhat whitened appearance, so their house in the marsh is already white-washed when constructed. The lining is of softer dry grasses.

From three to four eggs are laid, I believe not differing appreciably in markings from the numerous other varieties of this species. At least two broods are reared in a season. Eggs may be found nearly hatched early in April, and perhaps in the same vicinity other nests in course of construction. I have often seen fresh eggs in one nest and large young in another close at hand. Although the birds are common on the marshes, unless it be in locations where the marsh weeds referred to are used by the birds, nests of the Alameda Sparrow are not easily found.

H. R. Taylor, Cal.

The Starling

(*Sturnus vulgaris.*)

By Dr. R. W. Shufeldt, C. M. Z. S.

Fellow of the American Ornithologists' Union, etc.

OR nearly a century and a half the subject of the present article has been known to science, the species having been described by Linnæas as early as 1758 (S. N. Ed. 10, I. 167.), and during this long lapse of time the habits, the structure, and, indeed, the biology of this now very well-known species have been described by a great many both popular and scientific pens. It was introduced into the United States some dozen or more years ago, and is now well-established in the region in and about New York City. Over the area however, where it has up to the present time extended, its presence is but little suspected by the ordinary observer, while the sure footing it has made is a familiar fact to the ornithologist, and to those who, in one way or another, interest themselves in the ornis of the country.

On the northern half of the Island of Manhattan the birds are now becoming quite numerous and they are rapidly extending their habitat into the adjacent districts. In the spring and autumn it is by no means an uncommon sight to observe as many as fifty or sixty in a flock, while they select here similar places to breed as they are wont to do in Europe and northern Asia, or over those areas where they first became known to the ornithologists of the eighteenth century. They build their nests in hollow trees, in the towers and steeples of public edifices and churches, in numerous localities north of the upper half of Central Park, and the adjacent parts of Harlem and elsewhere. In the construction of their nest a pair of Starlings occupy considerable time, although after they are through with it the affair is not a very elaborate thing. For materials they commonly employ pieces of small roots, grass, straws, and various bits of twigs of trees and shrubs. As soon as the nest is completed to suit the pair of builders, the female deposits her eggs. These may range all the way from four to seven in number, and are generally of a pale blue color, although occasionally they may exhibit a greenish tinge. The writer has frequently observed the young in the parks and wooded places in the upper parts of the city of New York,

where they often attract attention through their noisy chatterings, in which they are joined by the parent birds in their efforts to administer to their wants in the way of food. Their numbers are so small however, in comparison with what may be seen in some of the cities of Europe that this medley of noises occasions no special annoyance to the inhabitants of the vicinity wherein it occurs.

With us the bird is generally known as the European Starling, while in the Old World it is known as simply the Starling or the common Stare, and by numerous other names over the various regions of its extended range. In this country it is most closely related to the *Corvidae* on the one hand, and the *Icteridae* on the other, a position it also occupies in the system in the avifauna of Europe. According to Alfred Newton, the distinguished British ornithologist, examples from Kashmir, Persia and Armenia have been considered worthy of specific distinction, and some of them are suspected to occur occasionally in England (cf. Sharpe, *Cat. B. Br. Mus.* xiii, pp. 26-38, and *Jour. fir Orn.* 1891, pp. 307, 308), while the resident Starling of the countries bordering the Mediterranean is generally regarded as a good species, and called *S. unicolor* from its unspotted plumage. It of course goes without the saying that the bird in the United States differs in no way in its



THE STARLING (*Sturnus vulgaris*)

plumage and structure from the species as it occurs in England. Few birds have been known to the ornithologist for a greater length of time than the subject of the present article, yet notwithstanding this fact, it is quite remarkable how much at variance are the descriptions of its plumage, as given us by the best authorities in ornithology. For example, Newton informs us in his *Dictionary of Birds* that the Starling "is about the size of a Thrush, and, though at a distance it appears to be black, when near at hand its plumage is seen to be brightly shot with purple, green, and steel-blue, most of the feathers when freshly grown being tipped with buff. These markings wear off in the course of the winter, and in the breeding season the bird is almost spotless." On the other hand, Pycraft, the eminent British ornithologist, describing the species in *The Living Animals of the World* (London), says: "The first plumage is a uniform greyish brown. Later black feathers, with large white spots at the tips, make their appearance among the brown. These spotted feathers eventually replace the brown, and the bird enters upon a second quite distinct phase—a black, spotted with white. Gradually this gives place to a plumage entirely unspotted, the feathers on the breast being spear-shaped. In the adult dress a wonderful variety of metallic reflections is acquired—green, purple and violet." (p. 518.) The descriptions given us by some recent American writers in ornithology are, as we know, quite at variance with the two just quoted, but it is hardly necessary to reproduce them here, as any reader of the present article will in all probability be familiar with the plumage of this long-known species.

Starlings are a favorite cage-bird in many parts of this country and they have long been known as such in the Old World. This should not surprise us, for it is a sprightly, handsome species as a pet, and in addition to its not uninteresting and quaint native notes, it is easily taught to whistle several simple tunes, and, it is said, even articulate a few short words with considerable distinctness. At large, it is one of the best friends of all birds to the agriculturist, as it is one of the most active enemies of many kinds of insects destructive to his crops. This being true, it will be sure to find favor in this country where agriculturist and ornithologist appear to be united and bent upon the destruction of every avian species that in any way may be detrimental to the interests of the farmer and the common greed of mankind. Under such favorable circumstances the species, in time, may come to be quite as numerous as it is now found to be in many parts of Great Britain and elsewhere. In those parts of the world where the species occur in great numbers their habits are most extraordinary, in fact so extraordinary, that it would quite exceed the limitation of space to describe them in any but the most general way here. Doubtless in a generation or two more they will, as Starlings vastly increase here, be quite familiar to our descendants in this country. Remember the common House Sparrow of Europe

has been with us, comparatively speaking, but a very few years, and they are now in evidence in their millions.

In some parts of England and in Ireland the Starlings congregate in enormous flocks. These immense assemblages have been so marvellous that they have passed into ornithological history as instances exemplifying the wonders of bird life. For example in 1845 something like a quarter of a million Starlings roosted every night in the trees of the Zoölogical Gardens of Dublin. This took place between the end of October and the end of March. On another occasion the roof of St. Patrick's Cathedral, in the very centre of the same city, was sought as a place of shelter by nearly two thousand birds of this species. Other places resorted to by them in vast numbers, are the reed-beds of the fenny districts in the rural parts of England. Here they roost in thousands in the autumn and winter months, and so great are their numbers on these occasions, that from their very weight they break down the stems in masses. Many have complained of this damage, as they have of the Starlings in the summer destroying the young growing fruit of various kinds. This latter occurs so seldom, however, that it is hardly worth the mention. Many British farmers, too, complain of the Starlings destroying the eggs of the Skylark. No evidence, I believe, of the truth of this has ever been collected, and is not likely to be.

It is one of the most wonderful sights in the world to observe the flight of Starlings. Being birds of strong and remarkable flight they put their powers in these respects to wonderful use when congregated in large flocks and performing their extraordinary aerial evolutions. It has never been the good fortune of the present writer to witness one of these, but they have been realistically described by naturalists ever since the days of Pliny (*Hist. Nat.* X. 24.) In executing these flights it is said the birds maintain the utmost silence, and Yarrell in describing one of them says "They wheel, close, open out, rise and descend, as if each were obeying a commander, and all this is done with the utmost marvelous precision while the flock is proceeding at a rapid pace through the air. At times it may extend in a long and nearly straight thread; suddenly an undulation is visible along the line, and in a moment it takes the form of a thin and smoke-like cloud; another moment, and it is a dense and almost perfect globe; then possibly, having preserved this appearance for a perceptibly longer time, it becomes pear-shaped, and in another instant has assumed a spiral figure; an instant after it has spread out like a sheet, and its members are streaming softly along the ground, perhaps to alight, or perhaps once more to mount aloft and circle as before."

Not long ago, I was told by a young English friend of mine, Mr. Charles J. Hale of Birmingham, who at the time was a visitor at my study in New York, that when shooting in the autumn in England, he had seen a flock of many thousands of Starlings make a roost of an evergreen forest, and

the trees had been almost entirely stripped of their leaves by them. In some places their excrement covered the ground for the depth of an inch, and the stench from this was so great as to be almost unbearable. As I have remarked above, we may see just such sights as this in a quarter of a century from now, in the forests of Eastern New York, and as these birds are not migratory in habit such things are surely coming to pass. Well, the guardians of American agriculture in the years to come, will have the problem to cry over, and the wiseacres among the ornithologists of the government have sufficient cause to pull the pelvic extremity of the public exchequer in order to obtain the means to abate the danger. The prophecy is made here that they will succeed no better than the modern meddlers with nature have in the cases of the European Sparrow and the mosquito.

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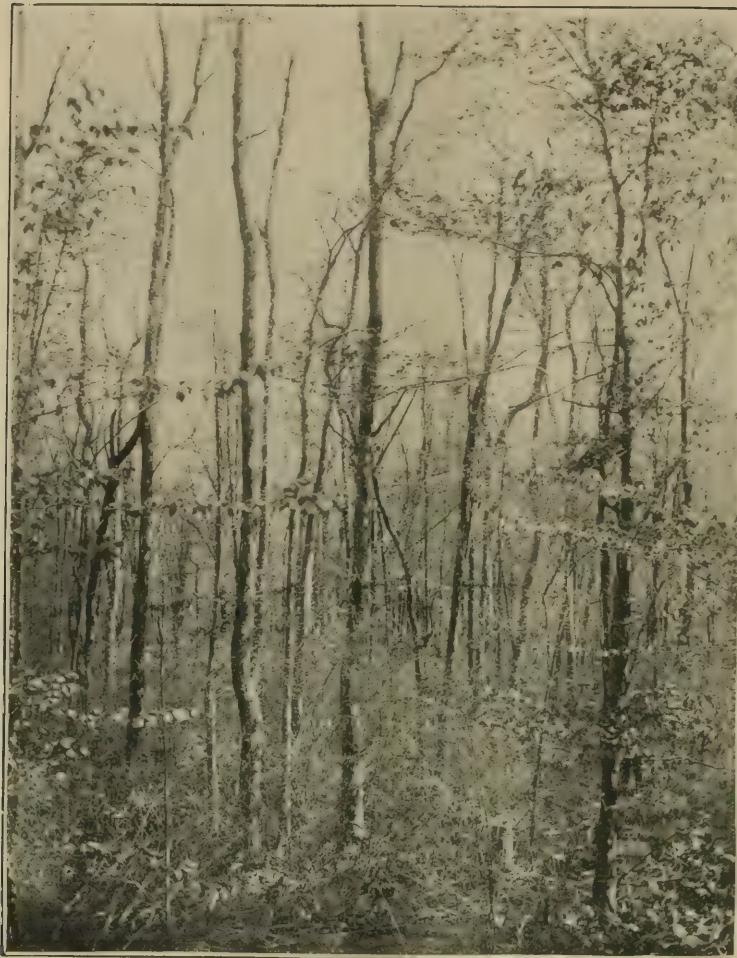
A Mammoth Hawk's Nest

THE splendid nest of Red-tailed Hawk (*Buteo borealis*) shown in the accompanying photograph (page 25) was taken April 22nd, 1904, in Clover Swamp, four miles west of Lapeer, Michigan, and contained three eggs. The nest was located in an ash tree eighty feet from the ground. To secure it *in situ* our climber sat in the nest and sawed off the limbs above. It was then secured on every side with quarter-inch rope, of which we used 150 feet, and so adjusted that the nest could not fall. When the large limb below the nest, and which supported it, was sawed off it doubled down by the main trunk and came within an ace of knocking the man out of the tree. The nest with branches, as photographed, weighed 125 pounds. It was taken to my office, securely packed and shipped to Mr. John Lewis Childs and is now in his collection, together with the three beautiful eggs which it contained. I have examined hundreds of Hawks' nests, but in size and beauty this is the finest one I ever saw.

W. A. Hart.



A MAMMOTH RED-TAILED HAWK'S NEST COLLECTED
BY DR. W. A. HART



SECTION OF TIMBER, SHOWING AN OLD NEST OF RED-SHOULDERED HAWK

Birds Breeding Within the Limits of the City of New York

By John Lewis Childs

Tis interesting to know how many birds and what species breed within the limits of the metropolis of the United States. To satisfy a desire in this respect I have for several years made observations and diligent inquiry with a view to acquiring all the reliable data possible on this subject. Having for thirty years resided close to the line which now divides the City of New York from the County of Nassau, on Long Island, my facilities for observing birds within the city limits have been most excellent. Many species which bred here ten or fifteen years ago are no longer to be found, and I shall record only such as I

know are still breeding within the city limits, or at least have bred there with in the past year or two. The territory embraced within the boundaries of New York City, or, as is generally known, Greater New York, is vast and includes not only the densely-populated sections of Manhattan and Brooklyn, but all of Staten Island, a part of what was formerly Westchester County, and a good portion of what was formerly Queens County, as well as Kings County entire, reaching from the East River to the Atlantic Ocean at Coney Island. The Borough of Richmond (Staten Island), the Borough of The Bronx, and the Borough of Queens, are not yet so densely populated but that some wild wooded spots may be found; also many orchards and some hay-fields and pastures, together with a good deal of marsh land adjacent to the salt waters of Long Island and Staten Island. The heaviest timber within the city limits is found in the Borough of Queens, along the ridge of hills known as the backbone of Long Island. Here, in spots, is a considerable growth of chestnut, oak, hickory and locust, and a few years ago was a favorite breeding place for the Red-shouldered Hawk. While this timber is rapidly disappearing to give place to streets, residences and gardens, it is still the home of the Crow, the Wood Thrush and the Screech Owl. All in all, the fields, hedges, woods, orchards and marsh lands within the city limits afford favorable breeding places for a goodly number of species, but not so many as we would like to find here, and not nearly as many as might yet be found were it not for the superabundance of the English Sparrow.

The English Sparrow

(*Passer domesticus*)

Often called European Sparrow, Domestic Sparrow, and more properly, House Sparrow

THE English Sparrow is the most abundant bird of New York, as well as of other American cities. Authentic records give 1850 as the date of the first importation of this bird into the United States from Europe. In that year eight pairs were brought over and liberated in the parks of Brooklyn, but they did not do well. Two years later a larger and more successful importation was made to the same city. In 1854 the bird was introduced at Portland, Maine, and in 1856 was introduced in Boston. In 1860 twelve birds were turned loose in Madison Square, New York, and four years later a lot were liberated in Central Park. In 1867 and 1868 the English Sparrow was imported into New Haven, Conn., and Galveston, Texas, and by 1873 they had been established in Salt Lake City, San Francisco and Halifax, Nova Scotia, as well as many other cities of the United States and Canada. In some sixteen different cities of the United States the bird was introduced by direct importation. It has now overrun the entire country and is a most serious pest. Aside from the fact that the English Sparrow furnishes bird life for the city streets where there might otherwise be none, the

bird is utterly useless. In the suburbs and country districts it is a decided nuisance and has to a great degree driven away our native song birds. The bird is very abundant in all parts of the city and has a breeding season extending from March to August, during which time a pair will raise several broods, some authorities claiming as many as five or six. The nest is a rather bulky and coarse affair, but carefully lined with an abundance of feathers and is placed in any convenient place about buildings, under the eaves or cornices, behind blinds or in any nook or crevice which can be utilized. Since the bird has become so abundant and has been more or less disturbed and persecuted in its breeding season, it is taking to trees for nesting sites. A dense spruce or other evergreen answers the purpose best and are in many places freely utilized, and there is every indication that the next ten or twenty years will see the bird use trees freely for nesting purposes, even resorting to forests and other locations far removed from buildings. It will then be a much more difficult matter to keep them in check than it is now. While they nest solely about buildings one can by persistent watchfulness effectually check their increase by shooting the parent birds or destroying their nests and eggs, but to do this one must be diligent. They will rebuild a nest and lay another clutch of eggs in a remarkably short time after being broken up. At Smithtown, Long Island, last year I found six pairs nesting in the rafters of a small boat-house. I tore down all the nests and destroyed the eggs, all of which were on the point of hatching. Two weeks later I visited the same place and found the nests all rebuilt with full complements of eggs, some of which were just beginning to hatch. Nests and eggs were again destroyed. Six days later I found the nests all rebuilt and in some of them one and two eggs were already deposited. They were again destroyed, but the birds did not rebuild them again.

The English Sparrow lays from four to six eggs to a set, seldom as few as four and occasionally as many as seven. Five and six are the usual number. Both parents participate in building the nest, incubating, and feeding the young when hatched.

In 1889 the United States Agricultural Department issued a 405 page bulletin (No. 1) on the English Sparrow. It was written by W. B. Barrows under the direction of C. H. Merriam, Ornithologist of the Department. In this work the bird is treated impartially from all points of view, as many as 3100 persons scattered all over the country having contributed facts and opinions regarding the bird's merits and demerits. A careful survey of all the facts brought out by this extensive work shows that the bird is universally condemned, and justly so. Every ornithologist of the country condemns him, as any one must who makes a study of his habits. No law in any of our States any longer affords him protection, and he should be slaughtered without mercy.

The food of the English Sparrow consists almost wholly of grain, seed

and other vegetable matter, and particularly fruits. Insects are not eaten unless there is a great scarcity of other food. It is, therefore, useless as a destroyer of pests, though it undoubtedly eats the seed of some weeds when grain, fruit or chicken food cannot be had in abundance. There is no end of evidence showing that they fight and drive away native birds which naturally nest near our homes, such as Bluebirds, Martins, Barn Swallows, Warblers, Wrens, Thrashers, Sparrows, Catbirds and Robins; my own observations going to show that fully one-half of all the nests of wild birds located about the trees, orchards and shrubbery of Floral Park are broken up by the English Sparrow. I have repeatedly caught them in the act of picking holes in the eggs of Robins, Chipping Sparrows and Brown Thrashers. They also delight in getting in a nest and with their feet and wings throwing out the eggs.

The Robin

(*Merula migratoria*)

THE Robin is the most common native wild bird breeding in and about New York City, and I can safely say that throughout Eastern North America it is the most loved and cherished of all the feathered tribe. This is owing partly to its familiar and confiding habits, and partly to its delightful song. As a songster, however, it does not equal other members of the Thrush family and must take third or fourth place in this respect among the birds that breed within the limits of the city of New York, but it is, one of the best songsters that nest near our homes. Everybody is familiar with the Robin, its nest, eggs and young. It could not well be otherwise with a bird that loves to dwell close to the habitation of man. Fruit and shade trees afford favorite places for its nests, but shrubbery, any kind of hedge, vines, arbors, summer-houses, fences, out-buildings of all sorts, and even dwelling-houses are frequently used; the birds seeming to appreciate the fact that the nearer they can locate to human beings the safer they are from their natural enemies, such as Crows, Owls, Hawks, red and flying squirrels, black snakes, and weasels. Near our homes the domestic cat is its greatest enemy, but the bird evidently fears that less than its many wild foes. A pair of Robins built their nest for several years in the lattice-work of the piazza to my house directly over the entrance to the front door. Every year they build in the rafters of a summer-house which is used by the children for a play house. Frequently a nest is located in the branches of some tree so close to the house that it can almost be touched from an open window. Three years ago a pair of Robins built a nest on the window sill of one of my office windows on the second floor of a large brick building. There was only the glass between us, and the incubating bird outside and I inside could see each other constantly, much to the delight of one of

us at least. One day when the bird happened to be off the nest, an old cock Sparrow flew down into it and thrashing about threw three eggs to the ground before my very eyes and before I could interfere. I grabbed my gun and went out and began shooting English Sparrows, bagging 130 of them and then stopped only because I was exhausted, and not because I thought the crime of the old cock had been properly avenged. The Robin has a variety of notes, all of which are mellow and pleasing to the ear. Its song is delivered from the topmost branches of some tree early in the morning, at evening and frequently throughout the day, generally just preceding a shower. The Crow is the greatest enemy of the Robin at nesting time. He does not venture into villages or thick settlements to a very great extent, though more so than one would believe who has not observed closely. I have frequently caught an old Crow soon after daylight in the early morning quietly prowling about the trees and shrubbery of my lawns looking for eggs or young birds to eat or carry away. They are usually wise enough not to come near an inhabited house except at a very early hour. Farther east on Long Island in the strictly rural farming districts, where Robins are plentiful and houses near which they might nest few, I have found them nesting often in the woods, in cedar thickets and other trees about highways and fences. In such a locality I have made careful observation for several years and am convinced that Crows break up more than fifty per cent. of all Robins' nests, either by eating the eggs before they are hatched or the young birds before they are able to fly. It is possible that Bluejays may have some hand in this but I think the major part of it can be charged to *Corvus americanus*. There are no red squirrels in this locality and but few black snakes and flying squirrels. I doubt if flying squirrels destroy the eggs of any birds except those that nest in holes in trees, such as Woodpeckers, Nuthatches, Chickadees, Wrens and Bluebirds.

The Robin breeds freely in Central Park and all the suburbs of the city. No doubt it would be found in the smaller parks also were it not for the superabundance of the English Sparrow and lack of food supply. Four eggs is the usual number, seldom three, and only twice in my life have I observed a set of five. The Robin arrives from the South usually in March and remains until November or later. Quantities of them spend the winter in the pine woods of southern New Jersey, and I see them nearly every winter about the cedar thickets of Suffolk County, Long Island. I even heard one sing at Smithtown on a clear, bright, frosty morning early in February when the ground was covered with ice and snow. Robins feed upon insects, berries and fruits. During summer they live almost wholly upon earth worms which they also feed their young. They are very fond of mulberries and when this fruit can be had in abundance they will not molest cherries or garden berries. They frequently annoy fruit growers and help themselves to the family berry patch, and a few years ago were freely shot on account

of these depredations, but people are learning to appreciate them more and more every year and not to begrudge them the small amount of fruit they eat, as at best it is but poor return for the good they do mankind.



THE WOOD THRUSH (*Hylocichla mustelina*)

The Wood Thrush

(*Hylocichla mustelina*)

BEYOND question the Wood Thrush has the finest song of all birds that breed within the limits or the vicinity of New York City. Few birds found in eastern North America rank with it in melody, and not more than two or three can be said to surpass it, even allowing for the variety of individual tastes. The Hermit, the Olive-backed Thrushes, and the Bobolink are the three birds which may be said to surpass the Wood Thrush in song, and while there is but little choice, personally I think them all better than the Wood Thrush. I know of but one place in the Greater New York where the Wood Thrush breeds. That is on the wooded hills north of Hollis in the Borough of Queens. Here during a part of April, May and June the delightful song of this bird may be heard morning and evening, as one drives along Hillside avenue. The Wood Thrush arrives from the South in April and breeds during May and June. The nest resembles that of the Robin,

The Warbler

but mud is not used in its construction and its lining is invariably fine black, wiry rootlets, precisely such as the Catbird uses, instead of dried grasses, which one finds in Robin's nests. The nest is usually placed in a small tree or in a clump of bushes and within reach from the ground. The eggs are about the color of a Robins' egg, the blue being only a shade deeper and the size a little smaller. With rare exceptions, four is the number in a set. I never saw but one set of five and no complete set with less than four. The set of five is in my collection and was taken in Connecticut, together with the nest, a few years ago.

Towhee

(*Pipilo erythrophthalmus*)

THE Towhee is found in every wooded section of New York, and while I have never personally found its nest within the city limits, there is no question but that it breeds every season in the Borough of Queens and probably on Staten Island, also. No bird conceals its nest more adroitly than the Towhee, and a set of eggs is as hard to find as that of the Ovenbird, even where the bird is very abundant. Eggs, four in number, spotted, and the nest is built upon the ground. The bird is a shy singer and its delightful song is not commonly heard. It is most likely to sing very early in the morning or late in the afternoon.

(*To be Continued*)



NEST AND EGGS OF THE WOOD THRUSH (*Hylocichla mustelinus*)

THE WARBLER

SECOND SERIES

VOL. I. NO. 3



PORZANA JAMAICENSIS
(LITTLE BLACK RAIL)



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JOHN LEWIS CHILDS. EDITOR

Plate III. Eggs of the Little Black Rail

BREEDING OF THE LITTLE BLACK RAIL, *Porzana jamaicensis*
IN SOUTH CAROLINA.

By Arthur T. Wayne

ON June 10th, 1903, a small negro boy came to me and said he had found eight eggs in a nest on the ground in an oat field, which was nearly cut over by a reaping and binding machine drawn by three mules. I questioned him closely and asked him if the eggs were unspotted as I supposed they were, of course, Partridge eggs, *Colinus virginianus*. He said the eggs were spotted and looked like Redbird's eggs, *Cardinalis cardinalis*, but added that he saw no bird on the nest and left the eggs undisturbed. When the boy adhered to his story that the eggs were spotted I immediately knew that the nest was that of the extremely rare Black Rail and I hastened with gun and collecting basket to the oat field which was less than one-fourth of a mile from my house.

He had not marked the spot where the nest was by any sign, therefore we had to hunt for it most carefully. I, at last, found it, and to my delight actually saw the female *on the nest*. It can be readily imagined with what pleasure I saw the parent incubating the eggs, as I was the *first* person who had *ever* seen this secretive bird *actually* on her nest! My first impulse was to catch her alive on her nest, and this could have been very easily accomplished as I was within an inch of her and with my hands outstretched it would have been a very easy matter to catch her. But I thought I would let her go and learn something of the song, habits and flight of these rare birds. Upon touching her she *ran* a short distance, then flew into a portion

The Warbler

of the oats which were not cut, but of a very small area. The nest contained eight eggs, and was built among the oats on high ground, and made entirely of the dry oat leaves arranged in a circular manner, but not arched over. It was 10:00 A. M. when she left the nest and I remained in the near vicinity until 11:00 A. M., when she again was found incubating. She ran, upon my approaching the nest, into the nearest cover of standing oats—about eighty yards away. So swiftly was this done that I had in mind a field mouse. Although the entire aspect of the field was changed the bird had no difficulty in finding her home.

As soon as she entered the standing oats she began to call, which notes



BLACK RAIL FAMILY GROUP, COLLECTED BY MR. WAYNE

resembled the words, *croo-croo-croo-o*, and then again almost exactly like the commencement of the song of the Yellow-billed Cuckoo. This was answered at once by the male, but his song was very different and the notes may best be described by the words, *kik, kik, kik, kik*, or even *kuk, kuk, kuk, kuk*. As the birds were rare, and the field would be ploughed as soon as the oats were harvested, I determined to make every effort to capture both parents, after listening to the song of both birds for more than one hour.

I walked into the standing oats, and little did I dream of ever flushing one

of the birds, but to my great surprise one flushed almost immediately and with a squib charge of dust shot I killed it, which proved by dissection to be the female. I then tried to flush the male, (knowing the one I had was the female by the coloration) so as to be positive of the song of *both* sexes. After hunting for more than forty minutes I failed to flush the mate, so went home and skinned the one which I had secured.

At 3:00 o'clock P. M. I went in search of the male, accompanied by a friend, Lieut. J. D. Cozby, who brought with him his fine pointer dog. Although we heard the notes of the bird incessantly, which never changed from *kik, kik, kik, kik*, or *kuk, kuk, kuk, kuk*, it was absolutely impossible to flush him but once in two hours' careful search, when he flew into the oat stubble, but ran like a phantom into the standing oats. It was nearly 7:00 o'clock P. M. and I was fast losing hope of obtaining the male, when I saw the dog pointing, but the bird ran between Lieut. Cozby and myself, then flushed as it passed me. I quickly requested my friend to shoot and by a fortunate shot he succeeded in killing it. When it is realized that it required *four* hours' constant search in order to secure the male it can be understood how secretive the Rail is in its environment.

The eggs would all have hatched in four or five days, but with care and patience I preserved them. It seems almost miraculous that none of the eggs were injured, as the hoof-prints of seven feet were all around the nest and one had actually lifted the nest from the ground, but despite the fact that a huge mowing machine, drawn by three mules, had passed over the nest twice and cut the stubble close above it, not an egg was broken. The complete group, nest, eggs and birds, mounted by Hoyt, are now in the collection of Mr. Childs.

The three eggs of Little Black Rail shown on our plate are from the set of eight described by Mr. Wayne. Our plate is an exact representation of the set—accurate as regards size, color and markings—all being remarkably uniform.

Swallow-Tailed Kite

(*ELANOIDES FORFICATUS, COUES.*)

By H. Nehrling



TEXAS is a veritable Paradise for bird-life. Nowhere else in this country have I seen so many birds in gardens and woodlands, in fields and prairies, in thickets and hedges, in swamps and along water courses and ponds. Innumerable Northern birds, particularly members of the Sparrow family and millions of water birds, winter here, and in spring and early summer the air resounds with the sweetest bird music. The Mockingbird and Cardinal, the Scissor-tailed Flycatcher and the Painted Bunting, the Blue Grosbeak and the Orchard Oriole are so abundant in their haunts that they imbue the landscape with a peculiar charm. The song of the Mockingbird and Cardinal is much more varied and beautiful than ever I have heard it in Florida or elsewhere. One of the most characteristic birds of the landscape of Texas, however, is the Swallow-tailed Kite,—a bird as abundant as it is beautiful. Though having seen it occasionally in Wisconsin and northern Illinois, and quite often in the Ozark region of Missouri and still more common in many localities in Florida, it nowhere forms such a conspicuous and ever present feature of the landscape as in Texas, where it is usually seen in numbers of from two and three to even ten and twelve, “matchless objects, chasing each other here and there, far and near, sailing along in easy curves, floating, falling and raising, then darting with meteor-like swiftness, commingling and separating with an abandon and airy ease that is difficult to imagine.” (J. W. Preston). I have seen it in great numbers in the bottom woods of the Colorado and Brazos Rivers, along Spring Creek and Buffalo Bayou, in Harris County, and also in the beautiful woodlands along the Comal and Guadelupe. In Florida its distribution is quite local, occurring in one locality quite abundantly and not at all in another.

The best opportunity of observing the Swallow-tailed Kite and many other birds, presented itself to me during my two years' sojourn in the back-woods of Lee County. My little cabin, where I resided with my family, stood on the edge of the West Yegua bottom. Though far away from the centres

of civilization, the time spent here was the most interesting and happy of my life—in spite of moccasin snakes and tarantulas, scorpions and centipedes, coyotes and outlaws. Throughout the year bird-life was exceedingly abundant. The beautiful and always very conspicuous Swallow-tailed Kite made its appearance here by the middle of March, not becoming abundant, however, until the first days of April. At this time of the year spring is well advanced. The procession of flowers in woodland and prairie is a glorious one, far surpassing anything I have seen in other parts of the country. At the arrival of the Swallow-tailed Kite the air is full of music. The notes of the Meadow Lark resounds from the grassy prairies and fields. The jubilant song of the Mockingbird, the sprightly lay of the Painted Bunting and the characteristic chant of the Orchard Oriole are constantly heard. The tangled thickets re-echo with the songs of numerous Cardinal Redbirds. Many strange notes arrest our attention,—among them those of the White-eyed Vireo, of the Tufted and the Carolina Titmouse, of Bewick's Wren and the Pileated Woodpecker. Scissor-tailed Flycatchers chase each other through the air in wonderful swiftness. And to all this we must add the bright sunshine, the balmy air filled with fragrance, and hundreds of little things new to the Northern eye. Associations of bird and plant life are wonderfully developed in Texas and they impress the mind of the nature lover deeply and lastingly. I can scarcely think of the Swallow-tailed Kite without calling back to mind those grand bottom woods and flower bedecked prairies, with their numerous inhabitants. When I first saw the Swallow-tailed Kite I was struck with its beauty and elegance. Three or four were sailing through the air in easy curves, appearing like gigantic Barn Swallows on account of their long forked tails and pointed wings, and not unlike them in flight. The pure white color of the underside and head, and the deep bluish-black of the wings, tail and back, contrasts wonderfully against the clear, deep blue sky—much deeper and bluer here in the South than farther North. I often observed these birds for hours as they emerged from the green tree tops or while circling over them, or over the fields and grassy prairies. As they are usually seen in small companies the picture becomes exceedingly fascinating. Often they ascend so high in the air that they appear as small, white spots, and one's eyesight must be very keen to discover them. Why they sail around at such high elevations and so continually, often without a perceptible movement of their pinions, is not quite clear to me. At such times they certainly do not look for prey. When hunting for food the flight is very different and much lower.

In Texas this Kite is always an inhabitant of the extensive bottom woods along rivers and creeks, where it invariably breeds. The bottom woods along the West Yegua Creek consisted of tall pin-oaks, hickories, elms, pecan and hack-berry trees, many of which were festooned with long pendant masses of Spanish moss. The underwood was dense, climbing

plants of various kinds being quite prominent. These forests were adjoined by a strip of post-oak woods, many of the trees being embellished with the grayish-green, soft and long *Usnea* lichens, where Parula Warblers and Green-crested Flycatchers were abundant. An extensive prairie, overgrown with patches of Engelmann's opuntia and mesquit bushes border the post-oak woods. In these bottom woods the Swallow-tailed Kite was very abundant, ten or twelve pairs nesting within a radius of several miles. During the nesting season the birds constantly emerged from the tree tops or they disappeared among them—a beautiful sight not easy to imagine. As they circle in and out among the trees the flight is exceptionally graceful and attractive and very swift. At such times they frequently utter their shrill and piercing call-notes, which sound somewhat like *re-re-re-re*. When hunting for their prey they are usually seen alone. The flight is at such times much lower and they constantly bend their head downward, scrutinizing closely the ground over which they pass. Often they hover for awhile over a certain spot, keeping themselves almost motionless, then they suddenly swoop down to the ground, seizing their victim—almost always a small snake or a lizard—with their talons and rising again almost as suddenly. They never retire to a tree with their prey like other Hawks, but they finish their meal while on the wing. Raising their talons and bending their heads downward they tear piece after piece from the wriggling reptile. This I have often observed in Texas as well as in Florida. I never have seen them catch birds or small mammals. In fact the small birds are not at all uneasy in their presence, and I have never seen the Martin or Kingbird attack them. This seems to imply that they are not regarded as enemies by them. Besides snakes and lizards, grasshoppers form a part of their favorite food. In August and September, in company of their young, they are often seen flying over cotton fields, where they feed on cotton worms and other insects. In Florida Dr. C. Hart Merriam often saw these Kites dart down and pick a wasps' nest from the under side of a leaf of some high palmetto and fly off with it, devouring, while on the wing, the grubs it contained.

Dr. A. K. Fisher, in his excellent book, "The Hawks and Owls of the United States in their Relation to Agriculture," (Washington, Government Printing Office, 1893), thus speaks of the food of our bird: "The principal food of this Kite is small snakes, lizards, frogs, and various kinds of insects. It never molests small mammals or birds. Among insects it is especially fond of wasp larvae, grasshoppers and dragon flies; and the power to change the direction of flight is most markedly shown in capturing the latter insects, for in its efforts to secure them it is often necessary for it to turn almost completely over in its evolutions." My own observations as well as those of all other ornithologists, who had an opportunity to observe these birds, show that they are very beneficial, as they consume large numbers of injurious insects.

In the spring of 1881 four pairs of Swallow-tailed Kites nested about a half a mile from my house, and in 1882 I found seven pairs in a little more extended locality of the same bottom woods. I observed them quite closely throughout these two seasons. They were not at all timid, flying constantly over my house. I found about twenty nests during these two seasons but they were mostly inaccessible to me as they were built invariably in the tops of the tallest forest trees. Out of this number only six nests could be examined. The first nest which I ever found was discovered April 29, 1880, near Spring Creek, Harris County, in the southeastern part of Texas. It was built in the very top of a tall and slender pine at least a hundred feet from the ground, and inaccessible to me. It was an irregular mass of small twigs and Spanish moss. I could easily see the breeding bird's tail and head with my field-glass. Near the West Yegua I had a much better chance of studying the nidification of these birds, though not at all satisfactory to me, because I was only able to examine comparatively few nests personally, as it was exceedingly dangerous to climb the tall trees. They were invariably built in the tops of the highest pin-oaks, pecan trees, hickories and hackberry trees, usually from 50 to 80 feet from the ground. All the nests which I saw were built of twigs and Spanish moss, often lined with usnea lichens. They were exceedingly strong and bulky, measuring from 12 to 15 inches in diameter—the cavity being considerably smaller than those of Crows' nests. In gathering material for their nests the birds never appear to reach the ground. They collect the small twigs, which form the foundation of the structure, while on the wing, breaking them with their talons while passing by, and carrying them in their talons to the nest. Spanish moss, usnea lichens and bark strips are gathered in the same way. On April 16, 1882, I climbed a tall pecan tree, but when I came near the nest I found it was built about 8 feet from the main trunk, the supporting branches being quite small and weak. The next day I climbed a tall hickory tree, in the top of which I had seen the bird carry material. This nest was about 55 feet from the ground and could be easily inspected, the surrounding branches being strong and the structure being placed in the center of the tree. It was built of sticks and Spanish moss and the cavity was snugly lined with usnea lichens. It contained three eggs, dull white in color, blotched with dark brown and rusty spots rather sparingly. One of the eggs only showed a few large marks. The shape was ovate and very regular, on both ends about equally large. They measured 1.82x1.51, 1.85x1.52 and 1.79x1.50 respectively.

While I was inspecting this nest all the birds in the neighborhood gathered, attacking me most furiously, flying almost into my face and uttering their piercing notes constantly. I had to strike at them constantly with a bag, which I had taken with me as a receptacle for the eggs and the nest, to keep them away. Another nest which I examined was built in a hackberry tree about 60 feet from the ground. The birds began nest-building April 6,

but the structure was not finished until two weeks later. On May 2 I saw one of the old birds disappear in the top of the tree in a rather quiet and peculiar way. It poised for a few moments over the tree, then it suddenly hovered down and did not appear again. As this tree was provided with branches about 25 feet from the ground clear up to the nest it was comparatively easy to climb. The breeding bird did not leave the nest until I was close to it. Then it darted off in a perpendicular way, screaming terribly as it left. In a very short time quite a number of Kites assembled around me, but they came not so near as in the first case. The nest was built in a similar way as the first one. It contained two fresh eggs which showed a decidedly greenish-white ground color, but after preparing them this color changed to a dull white. Four other nests which I examined May 9, May 11, May 17 and May 19 all contained two eggs, save one which had only a single specimen. Several boys climbed other trees for me later in the season, but all contained young, mostly two, and in one case three. In one case I had almost reached the nest but the birds, about ten in number, attacked me so furiously that I had to retreat. The tree was a very slender one, without any branches except in the crown, and I could not use my arms to keep the vigilant creatures in check.

In Florida this Kite usually nests in tall slender pines, usually near cypress swamps. Though I have frequently seen the nests I never was able to examine them. Dr. William L. Ralph, who had excellent opportunities to observe these birds in Florida, gives a good account of his observations in Charles Bendier's "Life Histories of North American Birds." (Smithsonian Institution. General Bulletin I, pp. 169-171). Dr. Ralph's observations of the birds' approaching and leaving the nest agree so well with my own that I cannot refrain from quoting them in full: "The Swallow-tailed Kite has a peculiar way of leaving its nest, for instead of flying directly from one side, as other birds do, it nearly always rises straight up for a short distance first, as if it were pushed up with a spring, and, when about to alight on its nest, it will poise itself a short distance above its eggs and then gradually lower itself down on to them. When they are thus poised above their nests there is scarcely a perceptible movement of their wings, and they often lower themselves so gradually that one can hardly tell when they have reached their eggs."

As a rule the birds are rarely molested while breeding, their nests being out of reach of the common nest robber—human or animal. In Florida tourists frequently use the birds while flying through the air as targets. For this reason they usually breed in uninhabited localities and are, as a rule, very timid and shy.

After the young have left the nest the families are often seen in the air around their old home or they are hunting for insects over cotton and corn-fields and around cattle. They are never seen on the ground. In the early

morning hours they may occasionally be seen perched on dry branches where they sun themselves or preen their feathers. Often they are seen skimming over the water, touching the wet element quite frequently like Swallows. Undoubtedly they drink in this way, and are at the same time taking their bath.

All the birds migrate from Texas southward by the beginning of October. My last record of having seen several of these birds near the West Yegua was made September 26, 1882.

* * * *

Breeding of Bicknell's Thrush

(Hylocichla alicæ bicknelli)

AS the Bicknell Thrush is quite local in its distribution and perhaps not known to all bird lovers, a description of a trip after its nest and eggs may be of interest. June 21st, 1904, accompanied by my son, a lad of ten years, I left home to try my hand at finding the nest of this species, hitherto unknown to me, but which I knew inhabited the White Mts. about twenty miles distant from Lancaster, N. H.

We passed the night in a small hotel at the base of the mountains, and in the morning made an early start for the summit of Mt. Madison, one of the Presidential Range, about four miles away. The path was a very good one, cut out and graded a little for mountain climbers and led through a valley up to and above the timber line, all the way in the forest till we reached the limit of trees. The birds were common during the first part of our walk, a number of varieties of Warbler being observed, among them Black-throated Blue, Black-throated Green, Blackburnian, Myrtle and Magnolia. We also heard several Winter Wrens, some Vireos and most abundant of all the Olive-backed Thrush, to my mind the most charming of our woodland songsters.

When about two-thirds of the way up most of these birds disappeared, occasionally a Winter Wren or a Yellow-bellied Flycatcher being heard and one Nashville Warbler was found at a considerable elevation.

The songs of the Olive-back became fewer and presently among the scrubby spruces and firs that line the mountain side we heard harsh call notes, very similar to the Night Hawk's cry, but not so loud. These we immediately recognized as the Bicknell Thrush and search for a nest began.

The task looked rather serious as the whole side of the mountain was covered with these short, bushy trees in thick and almost impenetrable confusion, but by following up the notes of one of the birds, in a short time I succeeded in locating a nest in a low stunted fir about four feet up and containing four eggs. This proved to be the sought for nest of the Bicknell

Thrush. The eggs are smaller and more pointed than any eggs of the Olive-back that I have taken and have much smaller and finer markings. The nest is very large and bulky for a bird of this size, being composed of very coarse twigs lined with green sphagnum moss and fine black rootlets. The only other birds seen in the immediate vicinity were the Black-poll Warblers, which were abundant, and a single Hudsonian Chickadee.

A terrific thunder shower put an end to our efforts very soon after finding this nest, from which we were glad to take shelter in the "Hut," a small store building erected by the Appalachian Club as a refuge for travelers who are caught in a storm or overtaken by darkness on this bleak and barren mountain top. After an hour the storm abated but clouds had enveloped the whole country, and as rain-soaked clothing and a cold north wind are quite depressing even to an ornithologist's zeal, we decided to seek the lower regions and await a more convenient season, well satisfied with the result of our first trip after Bicknell Thrush.

F. B. Spaulding.

* * * *

The Bluebird's Song

I THOUGHT the cold would never go,
For snow was added unto snow,
With gloomy sky, and never sign
Of red along the sunset line.

But when I heard the Bluebirds sing,
I knew it was of coming spring,
And though the sky was cold and pale,
I knew their wisdom would not fail.

Frank H. Sweet.

California Notes

By John Lewis Childs

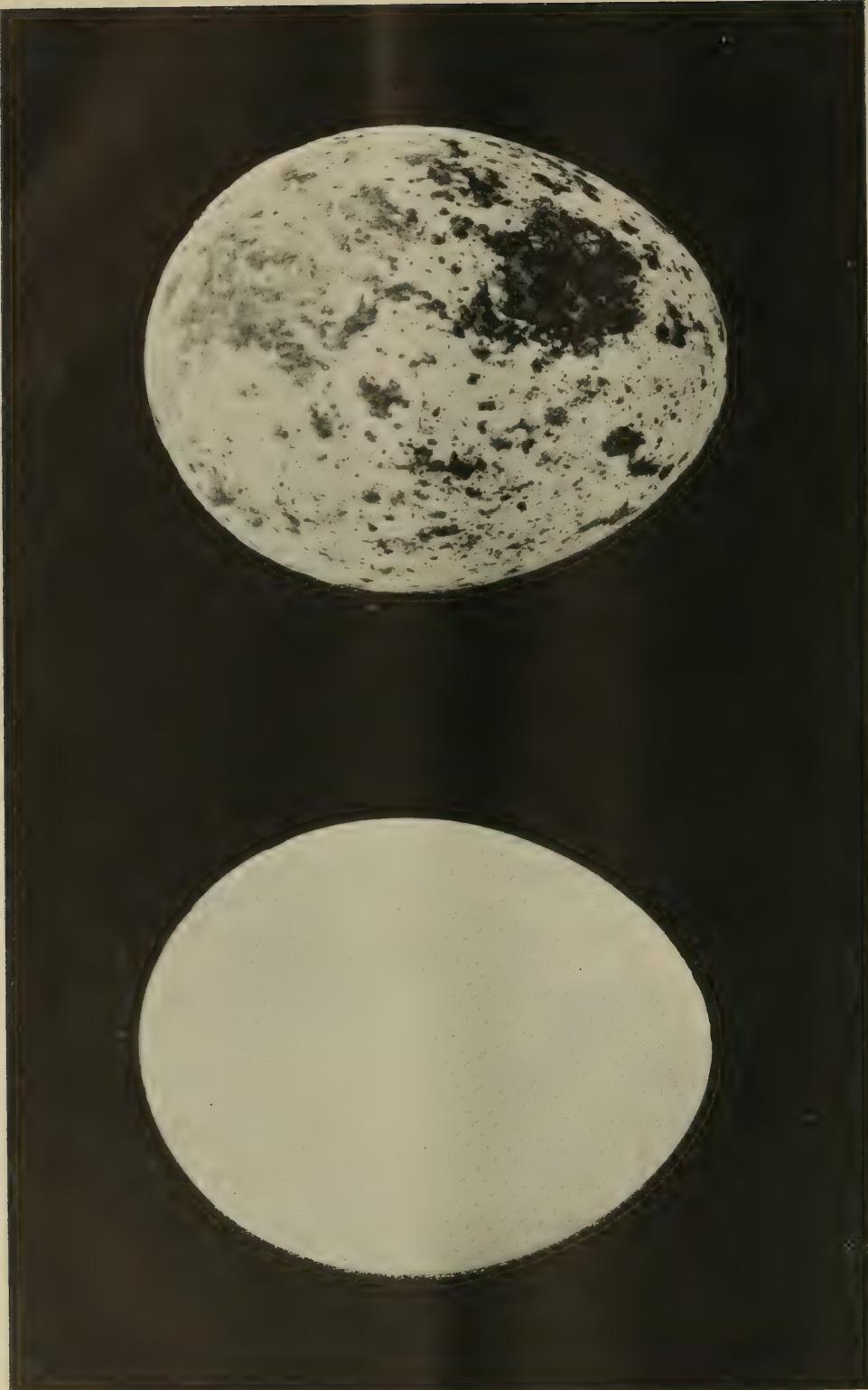
TAKING A SET OF GOLDEN EAGLE

(*Aquila chrysætos*)



IT WAS on the morning of February 17th that Mr. A. M. Ingersoll, O. W. Howard and myself left San Diego for an eighteen-mile drive up Mission Canon to investigate a nest of the Golden Eagle. The recent heavy rains had so washed and damaged the naturally poor roads around the mountain sides that they were well-nigh impassable. About noon, however, we succeeded in safely reaching the base of a tall peak where a pair of Golden Eagles had nested for many years. The top of this peak where the nest was located is about one thousand feet above the bottom of the canon and so steep that I did not attempt to climb it, but Messrs. Ingersoll and Howard forded the rapid torrent to the other side of the canon and after toiling for about an hour reached the top of the rocky summit, and crawling out upon some big boulders made slippery by the rain, which was now falling in torrents, and looking down a 200-foot cliff saw the nest twenty feet below them with two eggs. These were secured by the use of a 25-foot pole to the end of which was attached a small scoop-net. The operation was an extra hazardous one at any time, but doubly so on this occasion on account of the rocks being so wet and slippery that it was difficult to maintain a foothold. From the wagon at the foot of the peak in the canon below I could just distinguish the two moving forms above the cliff, but to tell whether they were man or beast was impossible.

The set proved to be a very beautiful one, one egg being heavily and brightly marked, the other pure white without a spot or mark of any kind. The trip to the top of the peak and back to the carriage occupied a little less than two hours and both men were drenched to the skin by the heavy rain which had set in. Fearing that the shower had caused further damage to the road over which we came we decided not to return that way, but to take an easier road though a longer one. At three o'clock we started, wet and shivering, on a twenty-six mile drive back to San Diego, reaching our destination late in the evening.



SET OF GOLDEN EAGLE EGGS TAKEN IN MISSION CANYON, SAN DIEGO CO., CALIFORNIA, FEB. 17TH, 1905

WESTERN GULL

(*Larus occidentalis*)

A LARGE colony of Western Gulls were daily seen on the beach at Santa Monica. They were remarkably tame and could be approached within a few feet before they would take wing or retreat. At times the flock would repair to some freshly-plowed fields a mile or two inland, and feed upon grubs after the manner of barnyard fowls. I am told that in this way they do an immense amount of good. I also observed them some twelve miles inland feeding upon the refuse of a slaughter house.

ANNA'S HUMMINGBIRD

(*Calypte anna*)

ANNA'S Hummer is by far the most abundant of all the Hummingbirds in southern California and has a breeding season of six months, beginning early in January. On February 20th while driving through Rustic Canon, at Santa Monica, I observed a new nest upon a long, horizontal branch of a dead locust. It contained two fresh eggs. Two days later I spent two hours with a friend in this same canon during which time we observed six nests of this Hummingbird. One was incomplete, and we had the pleasure of seeing the bird working at it. Another nest contained two birds about a day old. They were about the size of a honey bee with short, broad beaks, like the young of any other bird, showing absolutely no indication of the long, needle-like beak of a full-fledged Hummer. All the other nests contained eggs. Strange as it may seem, the nest of Anna's Hummer is easily found, notwithstanding its minute size, even when placed in the topmost branches of a huge sycamore. As one approaches a tree or bush containing a nest the female, if at home, will most likely fly off the nest, take a few circles around and return to it, thus indicating its exact location. Having thus satisfied herself of the nature of the intrusion, the bird will usually stick to the nest while one is climbing the tree, regardless of the amount of shaking which the branches may sustain; and in many cases the bird must be actually touched, or lifted off the nest, in order to see its contents.

I have never observed the male bird about any of the many nests I have examined. The female evidently constructs the nest and executes alone all the duties of rearing the family. The male may be observed perched in a conspicuous position on the top limbs of some dead tree or shrub where the brilliant colors of his plumage flash and sparkle in the sunlight, and where his song may be heard at short intervals. This is loud for so small a bird and decidedly insect-like, and may be compared to the song of the Grass-

hopper Sparrow, being as loud and very similar. The male at this time also performs some interesting evolutions. Leaving his high perch he will ascend straight toward the sky for about 200 feet, then turning, drop to the earth like a bullet, making a graceful curve as he comes close to the ground, at which time his song bursts forth in ecstatic delight and he resumes his favorite perch. I have seen one bird repeat this performance three times in six minutes.

CALIFORNIA PARTRIDGE

(*Callipepla californica*)

THIS beautiful and desirable game bird proved to be more abundant than I expected, and was continually showing up in the most unexpected places. One day I saw a flock of at least thirty in the public park of the city of San Diego. They were frequently seen in orange and lemon groves, where they might fall easy victims to the hunter. In fact, they were more commonly seen in such places than in canons, where one would naturally look for them. A friend who lives on Ocean avenue, in the heart of the city of Santa Monica, told me that two pairs reared their brood among the trees and shrubs surrounding his house and stables last year. I myself saw and heard the birds there on February 26th.

SNOW GOOSE

(*Chen hyperborea nivalis*)

IN going from San Diego to Los Angeles I saw from the car window a large quantity of Snow Geese, probably one thousand or more, feeding in a green field which sloped gently to the ocean. They had evidently been attracted by the green forage and had left the water to enjoy it.

THE ENGLISH SPARROW

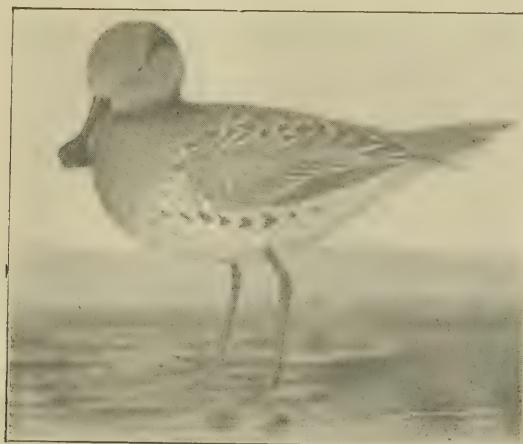
(*Passer domesticus*)

THE English Sparrow has not yet reached Los Angeles, but I am told that many have reached Bakersfield and already driven out the beautiful and musical House Finch which is the delight of all California towns. It will be a sorry day for Los Angeles when the sweet and melodious Finch gives way to the ugly and greedy English Sparrow. This Finch is to California what the Robin is to Eastern North America, only the Finch is a more beautiful bird and a much finer songster, and nests freely in the shade trees, palms, vines, shrubbery, etc., about the houses in all large towns and cities, singing from daylight until dark.

A SPLENDID MEETING

THE March meeting of the Southern Division of the Cooper Ornithological Club was held at the Hotel Arcadia, Santa Monica, Cal., on the evening of March 9th. About 30 members and 50 guests were present, the largest meeting in the history of the club. The feature of the meeting was Mr. Wm. L. Finley's talk on bird-life of the Pacific coast, illustrated by his complete series of lantern slides, over 300 in number. Never before were so many valuable and interesting pictures of bird life photographed from nature shown at one meeting in America. Mr. Finley is to be congratulated upon having accomplished so much fine work of such a difficult nature, and the Cooper Club is most fortunate in having such a talented and persistent worker among its members.

* * * *



SPOON-BILL SANDPIPER

A Good Specimen of the Spoon-bill Sandpiper

(Eurynorhynchus pygmaeus)

A GOOD specimen of the Spoon-bill Sandpiper, a rare Asiatic bird which has been seen and taken on the coast of Alaska, and therefore has a place in our North American fauna, (A. O. U., No. 245), has recently come into our possession. The skin, which has been mounted by Hoyt, was taken in Japan, September 27, 1903, and while it was a rather poor one, Mr. Hoyt succeeded in making from it a fairly good mounted specimen.

Birds at Oak Lawn, Pineville, Mo.

JANUARY, 1905, was one of the coldest months that I have ever seen in the Ozark Mountains, but it came near taming the wild birds of the grove. There was a little shyness toward human beings, for uncaged birds cannot quite throw off their first nature; but long before the severe weather was over anything like fear had been banished. They seemed instinctively to know that the man and woman who threw food twice a day to them, were friends of the birds. Cardinal Grosbeaks or Redbirds would hop over the porch like chickens, knowing perfectly well that we were looking out of the window at them. Now and then a particularly saucy fellow would cock his head at us as though to say, "Were you speaking to me? I thought you said something."

We fed them on crumbs, on cracked corn and on chopped feed. The last was the special delight of all the birds, as it contained both fine and coarse grains to suit all tastes. Perhaps there would not be a bird in sight when a double handful would be thrown out. In less than five minutes twenty to forty birds would be busily pecking away at the bits of grain. The man of the house counted in one circle twelve Redbirds, a Woodpecker, and Chick-a-dees and English Sparrows more than could be numbered, so many were there of them, and so fast they rushed about to get their share.

A dandified Grosbeak, proud perhaps, of his cardinal crest and flashing scarlet waistcoat with its black collar, took his stand by a thick spread of the chopped feed they all liked so well. He swelled up his breast at his scarlet-clad brothers, who calmly turned away and hunted food elsewhere. Next he raised himself threateningly against the ladies of the Redbird family, and they likewise beat a quick retreat. By this time the dandy had worked himself up to fighting trim, and when one of those quarrelsome braggards, a cock English Sparrow came up, he flew at that astonished bird, his crest sticking straight up, his feathers ruffled for war, and the mandibles of his bill snapping viciously together as though he were to tear the Sparrow in pieces. The Sparrow flew away. The dandy bird smoothed his feathers and looked up at the woman watching him in a way that seemed to say, "Wasn't that cute?"

There are plenty of trees and shrubbery at Oak Lawn, but alas! there are plenty of cats also. They are petted cats, and well fed, but neither full stomachs nor moral suasion can make them let the birds alone. Still, the birds hold their own tolerably well. Last season we counted over forty birds nests in the grove, and probably a few escaped our observation. There were seventeen species nesting there at one time.

Lora S. La Mance.

THE WARBLER

SECOND SERIES

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PORZANA NOVEBORACENSIS
(YELLOW RAIL)



NEST AND EGGS OF THE YELLOW RAIL

Plate IV. Eggs of the Yellow Rail

(*Porzana noveboracensis*)

THE NESTING OF THE YELLOW RAIL.

By P. B. Peabody

THIS fugitive water bird is well known to science during the two yearly migrations; but,—who ever finds its nest? The writer of this sketch has diligently tried to unearth just a little information concerning the nesting habits of the Yellow Rail during the past two years. Yet he has been utterly unable to secure a syllable of information, save that connected with the incomplete set of five eggs now in the Smithsonian Institution.

What is here written, then, covers, wholly, the writer's own observations. But the barest justice compels him to say, that the North Dakota breeding ground, wherein all the following notes were gathered, was discovered by that sturdy young naturalist, Frederick Maltby. Back in the '90's the writer heard the click of the Yellow Rail on the willow-margined marshlands of Kittson County, Minnesota. Save in the North Dakota cou-

lees, I never heard it anywhere else. A few collectors are familiar with the topography of the coulee regions of North Dakota. Midwesterly, in that ferruginous-rough-leg State, the solemn, ever present buttes give way, in certain areas, to the usual watersheds. Here and there treacherous bogs are found, amid the detritus of sandstone that caps the very summits of the buttes. From these bogs, with their unharvested growth of luxuriant coarse grasses, tiny and very narrow streams of ever-cool water splash noisily down into the broader coulees below. In these broad areas, lush with luxuriant and succulent grasses, wanton the water birds, with many a land-habitant disporting for joy, or hawking for prey, amid the plethora of insect life. Here wing the Rough-legs, after meadow mice; here are wafted upon soft winds the silent and uncanny Short-eared Owls. Here in the early morning dawn of fragrant June days hoot and crow the Sharp-tailed Grouse, even long after their mates are brooding eggs amid the lupins on the stony hill-sides.

Here, too, amid rank tules, the Yellow-head agonizes out his brassy "*oo-gl-ee-e-a-a-a-dl.*" Here the Marsh Wren plies his mushy marsh mass among the cat-tails, with a deal of merry hearted rustic piping. Here at sunset, poised over the rank, moist grasses, the Nelson Sparrow utters his soft, ecstatic "*kr-sh-sh-sh'a.*" Here beside the miriest depths the Sandhill Crane stands sentinel, and here, as a wanton merely, the (mis-called) Willets flash the splendor of their white-pied wings, with all the mellow, echoing ring of that splendidly inspiriting, "*Tr'whir, whirrit.*"

The Soras are here, yet very few in numbers. And the Black Rail is here, though science will flatly deny it. And right here, chiefest of all, most restless yet most fearless of all, is the Yellow Rail, least known and most rare, beyond the faintest shadow of a doubt, of all the mid-American water-birds. Mr. Maltby found a nest or two of the Yellow Rails on the bogs at the summits of the buttes. I have never either heard or found these birds there. Feeding, usually, among the shorter grasses, (yet always near the water), the Yellow Rail frequents, chiefly, amid the soft, tall meadow grasses. Herein they skulk, restlessly, feeding on what the water brings. They seem greatly local of habitance, and greatly attached to local breeding grounds. The nesting sites, so far as discovered, are found amid the green, growing grasses where water is under four inches in depth. The Rails spend much time amid dense masses of dead, tall grass; with what intent they never tell. Few neater nests are made. Most nests are very elaborate, built into grass masses with elaborate pains. The canopies are very thick, and it seems the birds prefer much to have last year's hay-rake leave a canopy for them. Save for one nest, found by Mr. Maltby, very few have been found amid masses of dead grass, and most of canopies have given evidence of being made of hay-masses found ready to use. My own nests have all been found in clean land, amid wholly-green grasses. The Yellow Rails

flush seldom, whether feeding or brooding eggs. True to Rail nature, they would rather run away. Hence no nests of any sort are more difficult to find than theirs. To a very slight extent the habit prevails of beginning abortive nests.

So far as discovered, the eggs of the Yellow Rail would seem to range from eight to ten in number. Sets of nine are perhaps most common. The eggs have never yet been found in layers. In size, the eggs of this Rail are very uniform. In ground color the variations are simply between lighter and darker shades of buff. The markings vary little, and little more among different sets than between the various members of a single set. Seldom are even small scattered spots to be found on the body of the eggs, the markings being, in the great majority of cases, confined to about two-thirds the apparent area of the apex of the egg. In character, spotting prevails, with a stippled effect. On some eggs the effect is blotchy to a slight degree, the lilac "under-markings" so characteristic of eggs of the Virginia Rail, occurring sparsely in the caps of brighter color.

This Black and Yellow Rail colony is very small. I doubt, greatly, if there be more than a pair or two of the Black Rails, while there has never been found any evidence that of the Yellow Rails there are more than six or eight mature birds in the colony. The birds appear to be very sociable, nesting all within a very small area. But a very slight increase could be discerned in three years, although there must certainly be not less than twenty young birds hatched in the colony every year, whether eggs are taken or not.

These Rails are largely nocturnal in their habit. Of a gloriously clear moonlight morning, in early June, the ticking was maintained whole quarter-hours at a time, by at least two males near together. At three o'clock this dry yet throaty medley seemed wierd enough, commingling with the "*coot-coot-coot-coot-coot*" of the Short-eared Owls and the hooting of the Sharp-tailed Grouse, all softly echoing across the musky marshes while yet moonlight and daylight were struggling for victory.

Our plate shows three eggs of the Yellow Rail, from a set of ten taken by Mr. Peabody in Benson county, North Dakota, June 4th, 1901. Incubation had begun. The ten eggs are practically alike as regards size and markings, our plate showing both size and colors accurately.

Nesting of the Ivory-billed Woodpecker in Florida

(*Campephilus principalis*)

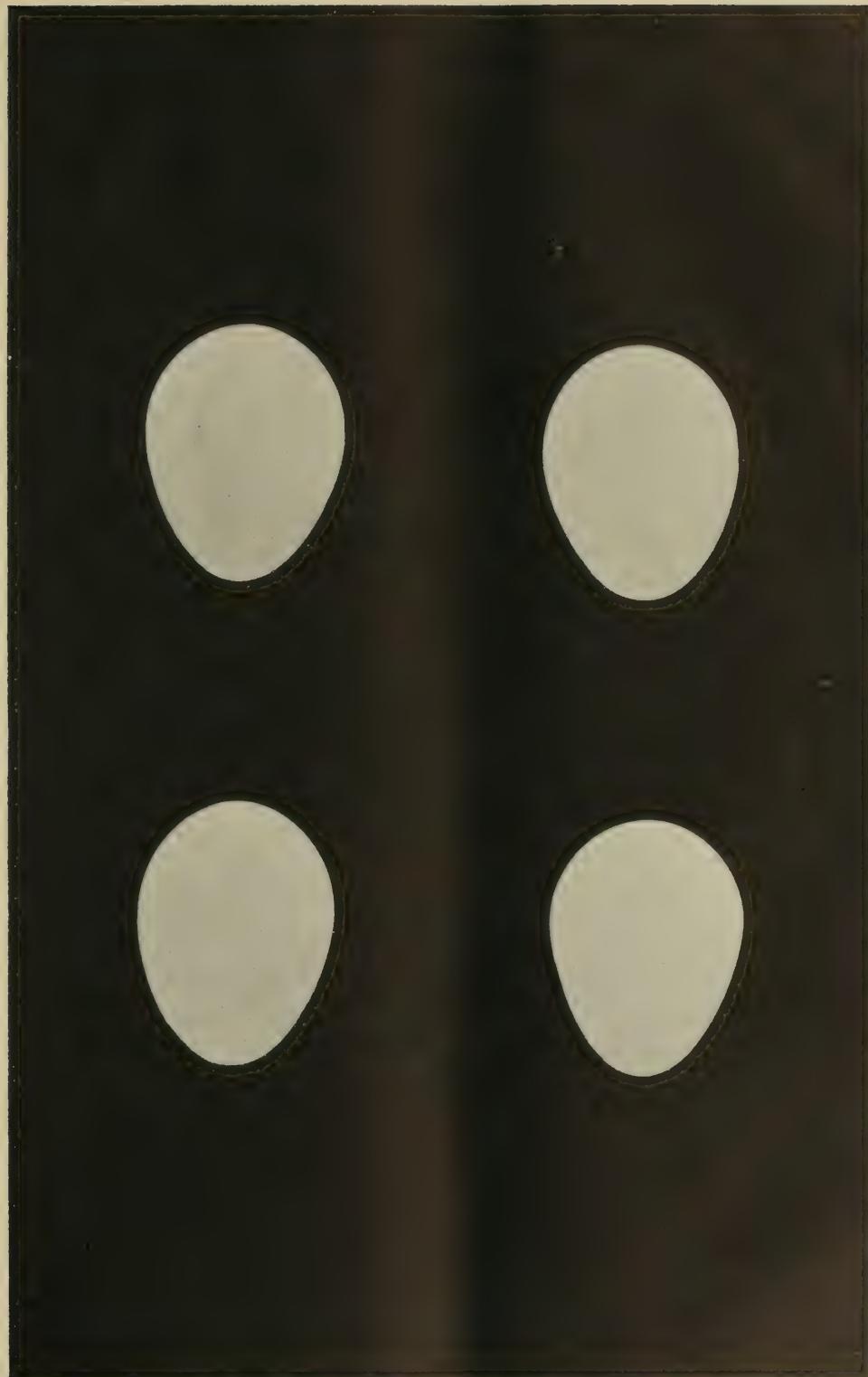
By R. D. Hoyt



F among all the feathered tribe there is a bird whose nest is more difficult to locate than that of the Ivory-billed Woodpecker it belongs to some species with which I am unacquainted.

For three seasons I have been among these birds at nesting time, followed them through almost impassable swamps, camped with them at night, and started with them again at daylight. I have had some of the most expert woodsmen and trappers in my employ and withal, after three seasons' hard work I have obtained but two sets of eggs, and these from the same pair of birds. I found some nesting places of the Ivory-bill in November, 1902, but at that time I had no definite idea as to the time of breeding. The trees in this part of the swamp showed several old nest sites and a pair of birds could be seen there every evening. I got my friends, the Brown brothers, to keep an eye on the birds and if possible locate a new nest, but although they watched the birds closely it was not until March 4th, 1904, that they found the old birds feeding the young.

Mr. Brown told me that these birds were the shyest and most cunning of anything that wore feathers; he would sit concealed for hours and watch them, yet they must have known of his presence as they would go in and out of every old nest in the swamp, but steer wide of the new one. After this we had a definite time in which to look for the eggs, and on February 1st the brothers made a business of looking for a nest and before a week passed they had one located, and on the 15th wrote me that the birds were sitting, one going on the nest as soon as the other left it to feed. I at once made ready and, accompanied by my friend, John Davy of Clearwater, we started for Clermont in Lake Co., which we reached the following noon. Here we procured a team and drove 15 miles to the swamp. The Brown brothers were waiting for us and, getting out rubber boots, climbing irons, pail and line, we soon got through the mile of swamp to the nest tree. All was silent, but a blow on the trunk brought the male bird from the nest; he flew but a few feet to another tree, struck a few sharp blows and uttered



EGGS OF THE IVORY-BILLED WOODPECKER, TWO SETS, TAKEN BY R. D. HOYT, IN LAKE CO., FLORIDA

his call-notes, which were at once answered by the female which came from some distance.

It took Mr. Davey a trifle over one minute to walk up the 58 feet of clean cypress trunk to the hole, adjust his safety belt, and proceed to investigate the contents—two eggs! My first thought was that the set was still incomplete, but as the male bird was on the nest I thought best to examine the eggs, so Mr. Davey sent down the line and I sent up the pail and the eggs were carefully lowered. A glance at them showed that incubation was well under way so I called, "Come down." During the time that Mr. Davey was at the nest both birds remained close by, at times being within ten feet of him; they kept up their plaintive cry, at times striking a powerful blow with the bill.

This nest was located in a live cypress in the heart of the cypress swamp. Much fallen timber was scattered around and any ground not covered with water was densely covered with myrtle and bay bushes, interlaced with bamboo briar. The nest tree was but 20 yards from that occupied last season. The nest site was not taken. I hoped that if the birds were not too much disturbed they might nest again and in this I was not disappointed, as on March 9th I was notified by Mr. Brown that he had again located a new nest in another tree 75 yards from the first. The nest was in a dead cypress stump from which the top had broken off within a year; the nest site was 47 feet from the ground, and 8 feet below the top of the stump, and the nest contained two eggs but slightly incubated. The birds had evidently lost little time in excavating a new nest. They had done this, laid and begun sitting all within 20 days.

This nest site was taken in good condition; but the first tree having a very heavy top and the birds having left the walls of the nest site so thin the whole thing smashed to pieces when the tree was cut. All measurements were carefully taken before the tree was felled; the nest site was 58 feet up, the trunk 15 inches in diameter at this point. The opening was $6\frac{3}{4}$ by $3\frac{1}{4}$ inches and 14 inches deep from bottom of opening. The eggs measured 1.46×1.09 and 1.43×1.07 inches.

The second nest was 47 feet up, trunk 14 inches in diameter, the opening 6 by $3\frac{3}{4}$ inches and 14 inches in depth. The eggs measured 1.43×1.10 and 1.43×1.08 inches, and were deposited on a layer of fine chips. The opening in both nests was uneven and rough, and just inside the hollow was much enlarged, being 9 inches across, and unlike the nests of other Woodpeckers, was smaller at the bottom than at the top. The section of tree that we brought out of the swamp weighed 200 lbs., and the transportation of this over ground that would "bog a shadow" was in itself no small task.

During the past three years I have had some opportunity of studying the habits of these interesting birds, and I can state some facts that do not agree with other writers any more than does the nesting time between Flor-

ida and Louisiana, April and May. In Florida they begin building the latter part of January and if undisturbed the eggs are laid by February 10th. After the young leave the nest in April they and the parents remain together until the mating season in December. During the summer they are always found in bands of three to five, and I have never seen more than the latter number; this would indicate that the number of young reared was one to three, and groups of three and four birds are much more frequently seen than the larger number.

The call note of the Ivory-bill is said to be "loud and shrill, and to somewhat resemble that of the Pileated Woodpecker." Anyone who has heard this note once will never mistake it for that of any other bird; it is a single note and resembles the word Schwenk. At times keyed rather high, again soft and plaintive, it lacks carrying capacity and can rarely be heard over 100 yards on a still morning, while the harsh notes of the Pileated Woodpecker can be heard a full mile. The note of the Ivory-bill is uttered at all times while searching for food; the birds will pass through the swamp from tree to tree until they come to a good feed tree when all hands proceed to tear it to pieces; and it is remarkable how quickly they will reduce a decaying maple or oak to chips in searching for the big wood grubs it contains. At this time they are not at all shy, and I have approached them within 20 yards and stood silently for half an hour watching them at work. I have never seen this bird on the ground, but they will begin low down on a feed tree and work upward until satisfied; they will then go to the very top of the tree and sit for a time calling to one another and rapping on the dead wood, but the hammer-like blows can be heard a greater distance than the call.

One marked feature of the nest tree of which I have seen no mention made is that the outer bark of those I have examined was torn to shreds from a point some distance below the nest site to 15 or 20 feet above it. This made the tree noticeable for quite a distance. The last nest taken this season had little of this work done. I presume the birds had been too busy otherwise and would have decorated it later on.

Last season one of my men found a nest in Taylor Co. on March 16th. This was situated in a dead but still sound cabbage palm about 25 feet from the ground, and the old birds were feeding the young at the opening. This tree had the fibre shredded up in the same manner as the cypress. For some reason these birds did not breed in the same vicinity this season. I visited the same locality on the 20th of February but could find nothing of them.

This beautiful Woodpecker is not uncommon in any of the vast swamps bordering the Gulf coast of Northern Florida, but the collector who goes for a set of eggs will find he has to work for them, and if he succeeds in getting a set the first one or two seasons he will do what I could not.

Birds Breeding Within the Limits of the City of New York

(Continued From No. 1)

By John Lewis Childs

The Starling

(*Sturnus vulgaris*)



HE Starling is a native of Europe, but has been taken in Greenland which gives it a place in the Fauna of North America, A. O. U. No. 493. In 1890 the bird was introduced in New York City by direct importation and has increased with such rapidity that it is now seen for many miles in all directions from New York. It breeds abundantly in upper New York, nesting about buildings and in belfries, cupolas and church steeples, and, to some extent, in trees. The eggs, four to six in number, are exceedingly beautiful, being of a pale, bluish-green tint that is decidedly delicate and rare. In winter the Starling is often seen in flocks of fifty or more individuals flying about in quest of food, particularly when the ground is covered with snow. At such times they come regularly to Floral Park to feed upon the berries of the Boston Ivy (*Ampelopsis veitchii*) which grows in such luxury here on brick buildings. I have never observed them in flocks at any other time, though during spring, summer and fall single individuals or pairs are often seen.

The Starling is a decidedly handsome bird in plumage, being a metallic green or purple spotted above with buffy-white dots and below with heavier spots of white. On the wing it is graceful and easy. Its note is a long-drawn whistle of two parts and a metallic call. At times a flock is decidedly chatty and noisy. Its food consists of seeds, and berries to some extent, but to a far greater extent insects. There is no bird that does more good in respect to its food habits, as it eats large quantities of the most destructive grubs and insects that exist. When a pair have five or six young ones to feed the quantity of ground and tree pests destroyed by them is enormous. Being beautiful and useful, an all-the-year resident, and inhabiting both the city and country, the Starling is a most welcome bird in America, and will never become the nuisance that the English Sparrow has proved itself to be.

We should be as anxious to encourage the Starling as we are now to destroy the Sparrow. This opinion is contrary to that of Dr. Shufeldt, as expressed in the last number of THE WARBLER, (page 20). We certainly do not share his views, and believe he is mistaken in thinking that the Starling will become as great a nuisance as the English Sparrow.



NEST AND EGGS OF THE MARYLAND YELLOW-THROAT

The Maryland Yellow-Throat

(Geothlypis trichas)

MARYLAND Yellow-throaths love to dwell about hedges, fences and places where there is a considerable growth of low shrubbery. They are about the size of the Yellow Warbler and build their nest upon the ground, and they are past-masters in the art of concealing their abiding place. The eggs are four or five in number; white, spotted black. The song is loud, clear and exceedingly pleasing. While not abundant, it is by no means an uncommon bird in the Borough of Queens. Our illustration shows a nest with four eggs photographed from nature on June 2d, 1904. This nest was carefully concealed in a dense clump of skunk cabbage (*Spathyema foetida*), which grew in a swampy tangle near woods.



NEST AND EGGS OF THE CROW

The Common Crow

(Corvus americanus)

THE Crow breeds freely on Long Island, extending its nesting range well into the Borough of Queens along a range of hills north of Queens which is well wooded. It may also nest in the Borough of Richmond, but on this point I am not informed. About ten years ago a pair of Crows built a nest in a half-grown oak tree that stood alone in the middle of a large cultivated field just inside the city limits. The old bird was sitting on five eggs when I found the nest and that was before any sign of foliage had appeared upon the tree, and the nest could be plainly seen both from the Jericho turnpike and the Long Island Railroad. As far as I know, the brood was duly hatched and successfully reared.

Immense numbers of Crows winter on Long Island, and it is not uncommon to see flocks, containing thousands of individuals, feeding in the corn fields of Hempstead Plains, or frequenting the bays and ocean beaches a few miles to the south in quest of shell-fish or any sort of food which the waters may yield. Late afternoons they are seen moving north to some rookery across the Sound on the Connecticut shore. Notwithstanding the

great number seen here, I have never yet observed an albino specimen, though one frequently hears of white Crows being seen. I once possessed a fine albino Crow that was sent to me from Missouri.

The American Crow would rank as a very useful bird were it not for the fact that he destroys vast quantities of eggs and young of small, useful species. This sin, in my opinion, offsets all the good that the bird may do in eating injurious insects and other vermin.

Oven-Bird

(*Seiurus aurocapillus*)

WHEREVER there is woodland in the vicinity of New York there the Oven-Bird will be found. It is one of the most abundant birds of Long Island, and its loud, ringing song may be heard at all times during May and June. It is a persistent singer and the woods echo and re-echo with its melody. This bird derives its name (Oven-Bird) from the peculiarity of its nest which is oven-shaped. It is built on the ground, most carefully concealed and roofed over, with an entrance at the side. There is nothing to indicate its presence and one may step upon it without suspecting it.



NEST AND EGGS OF THE OVEN-BIRD

The Warbler

After the nest is finished the entrance is usually closed by the use of a few dry leaves, and I have often found this to be the case when the female was incubating. The bird is a close sitter and will not leave the nest unless almost stepped upon, and may be easily captured with the hand. The eggs are white, densely spotted and, with very rare exceptions, five in number.

Phoebe

(*Sayornis phoebe*)

DURING my thirty years of residence at Floral Park, near the limits of Greater New York, I have never seen in this vicinity but one nest of the Phoebe. In fact, it is the only one I have ever found on Long Island west of the Suffolk County line. It is altogether probable, however, that this bird does breed sparingly in Nassau County. The nest in question I found last June, or rather my attention was called to it by some school children when I was visiting the State Normal and Training School, at Jamaica, Borough of Queens. I was in the third story of the building, which is a large brick structure, and was asked to look out the window and see a birds' nest, which was built upon a stone window cap of the story below. It was exposed to the open sky above and to the elements on all sides, excepting one, the wall against which it was located. It contained five white eggs, distinctly spotted with black, and I was in a quandry as to its identity until the return of the bird, which came and went on the nest, and I saw it was none other than a Phoebe. I had never before seen a spotted egg of this bird, as they are invariably white, neither had I ever seen a nest of this species located in an open and exposed position, it being the universal habit of the Phoebe to locate its nest under a bridge or some other suitable shelter. I should never have thought of finding a Phoebe's nest in the city, particularly in such an unusual location, and with spotted eggs. As a whole, it is the most radical departure from a general rule that I have ever observed in the breeding habits of any bird.

The Ruby-Throated Hummingbird

(*Trochilus colubris*)

ONLY one species of Hummingbird inhabits Eastern North America and fortunately that one, the Ruby-throated, is found in all localities and breeds within the city limits of New York. Only two or three nests have been found here at Floral Park for many years. On August 13th, 1903, a nest with the usual pair of tiny, white, oblong eggs upon which the female was sitting, was found on the limb of a shade tree on Tulip avenue. This is an unusually late date, for the Hummingbird nests mainly in May and June. A pair of Hummingbirds frequently nest in a honeysuckle that trails

over the porch of a friend's house in Jamaica. The nest of the Ruby-throated Hummingbird is very beautiful and is constructed mainly of fine vegetable fiber and cobwebs artistically covered with lichens to make it look like a moss-covered knot on a limb. I have in my collection a nest from South Carolina made of a dark red fiber which I am unable to identify. This nest is very beautiful, and though it contains a full set of eggs, it was evidently not completed, as the limb on which it was built was not covered, being visible in the bottom of the nest. This also mystified me until one day last



NEST AND EGGS OF THE RUBY-THROATED HUMMINGBIRD

year at Gilroy, California, I found on a rose-bush a nest, with two eggs, of Allen's Hummingbird, upon which the female was sitting. Every time she was frightened from the nest, she returned with a bit of soft down in her beak and after settling down upon the nest carefully tucked it away under her body, thus showing that the work of lining the nest was being carried on after incubation had begun. I have no doubt, therefore, that the lining of the dark red nest referred to was to be completed during the sitting period.

The Cedar Waxwing

(*Ampelis cedrorum*)

THE Waxwing undoubtedly breeds in the Borough of Queens, City of New York, though I have never actually seen an occupied nest within the city limits. I give it a place among the birds breeding in New York City

limits, however, from the fact that three years ago a young Cedar Waxwing was picked up under some trees that line the Jericho turnpike. As the bird was not old enough to fly, it must surely have fallen from a nest. It was brought to me as soon as it was found and I reared it in a cage. The date was September 15th, a remarkably late one for this bird, for, though naturally a late breeder, June, July and August are its usual breeding months. I never before heard of a nestling in September.



NEST AND EGGS OF THE RED-EYED VIREO

The Red-Eyed Vireo

(*Vireo olivaceus*)

IN the suburbs of New York City the Red-eyed Vireo is not an uncommon bird, though I believe it breeds but rarely within the city limits. The nest is suspended in the fork of a branch on some small bush, shrub or tree, usually less than ten feet up. The eggs, three or four in number, are pure white, slightly spotted with black. While I have not found a nest within a mile of my house (and they are very conspicuous after the foliage drops in autumn) the Red-eyed Vireo may be heard singing in the trees on my lawn almost every day during the summer. The song is exceedingly sweet, and a bird will frequently keep up the strain for one or two hours at a stretch.

The season of song of the Red-eyed Vireo is probably longer than that of any other North American bird, except the Song Sparrow. I have heard the song as late as the 20th of September, or about the time the birds begin to migrate South.

The Kingbird

(*Tyrannus tyrannus*)

THE Kingbird is not a common bird in the suburbs of New York, but one that makes his presence so thoroughly known that he appears in most localities to be abundant. Let a Crow or Hawk fly over during the nesting season of the Kingbird and one is sure to see and hear all there are in the immediate neighborhood. The Kingbird delights to locate near a farm house and build its nest in an apple or pear tree, and a pair thus located is the greatest protection to the poultry yard against the depredations of Hawks and Crows that can possibly be had. All wild birds nesting in the vicinity are likewise protected. The Kingbird is so abundantly able to protect its nest and young that I often wonder why they are not a great deal more abundant, and think what a blessing it would be if they were as plentiful as Robins.

The nest is neatly constructed, and the eggs, four or five in number, are white with a slight creamy tinge, heavily spotted with black. With rare exceptions I believe that but one brood is raised in a season.

The Brown Thrasher

(*Toxostoma rufus*)

THE Brown Thrasher is a rare bird within the limits of the city of New York, and, as far as I know, may be found breeding only in the Borough of Queens. There one may find some dense hedges, thick brush, and wild fields which afford favorable conditions. The bird is sly and adroit in its movements, and on several occasions has slipped unnoticed into the shrubbery of my lawn, constructed a nest, and deposited a full complement of eggs before its presence was suspected. In each case the nest was discovered accidentally and not by seeing a Brown Thrasher about the place, for not one was ever caught sight of except upon the nest, and I never heard one sing nearer than a third of a mile away. In every instance of the bird nesting on my lawn the English Sparrow broke up the nest by picking holes in the eggs.

The Brown Thrasher is a most delightful songster and a great mimic. In this respect he is excelled only by the Mockingbird, and his notes are loud, clear and melodious. Like the Robin, his song is delivered from some conspicuous perch on the branches of a small tree or shrub, and while, as a

rule, he does not sing often his song when once started is usually of considerable duration. I have listened to one fifteen or twenty minutes at a time and within full view. On two or three occasions when I have been listening the bird left his perch and took up a position much nearer to where I stood and poured out his notes with such fervor that I could but believe that he appreciated the fact that he had an attentive listener. The nest is sometimes placed upon the ground under some sheltering foliage and sometimes in a low, dense bush. In the latter position it is a rather bulky affair, built chiefly of sticks and lined with dry rootlets. The eggs vary widely in colorings and markings and a full set ranges from three to six, five being the usual number. One season, however, a few years ago all the nests of the Brown Thrasher I found on Long Island, and they were many, contained just three eggs—no more, and no less. The same year all the nests of the Field Sparrow (*Spizella pusilla*) I found contained only three eggs or three young birds.

The Screech Owl

(*Megascops asio*)

I BELIEVE the Screech Owl is the only one of the *raptores* that still breeds within the city limits of New York, and in a few years more this bird will have retreated before the advances of suburban homes, street railways, and electric lights to more secluded quarters, never to return. It is yet possible to find one or two pairs each season nesting in some old orchard or in the woods covering the hills, or, as locally known, "rocky hills," back of Creedmoor, in the Borough of Queens. The nesting site of the Screech Owl is some cavity in a decayed tree, an old knot-hole, or some former home of a Flicker. The eggs, five to eight in number, are pure white and nearly round in shape. The bird's food consists of mice, small reptiles and insects. It is a useful bird and should be protected. I sometimes see one or more Screech Owls during August evenings on the lawn about my house or perched upon trees or telegraph wires. These are evidently young birds from a nearby brood.

(To be Continued)

THE WARBLER

SECOND SERIES

VOL. I. NO 5



PASSERULUS PRINCEPS
(IPSWICH SPARROW)



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JOHN LEWIS CHILDS, EDITOR

Plate V. Eggs of the Ipswich Sparrow

(*Passerulus princeps*)

By W. E. Saunders

THE nest with five eggs of Ipswich Sparrow was found by flushing the bird while walking along the edge of a low bank which fell away towards the lake which takes up a large portion of the interior of Sable Island, (Canada).

The set was complete when found and was taken the same day.

The nest was perhaps a little better concealed than usual and was very bulky, even for the Ipswich Sparrow, which normally builds a nest containing much thicker walls than the nests of the ordinary eastern ground-building Sparrows; it contained a considerable quantity of "eel grass", the local name for a species of sea weed which washes up in great quantities in the form of streamers about $\frac{1}{4}$ inch wide; and as this wash on the edge of the lake was only about fifteen yards away from the nest it was a very convenient material for this bird to use.

This edging of eel grass around the lake and ponds of Sable Island was quite a curious and interesting feature. It varied in width from a few inches to two or three feet and its main point of interest lay in the fact that in it the Semipalmented Plover (*Ægialitis semipalmata*) makes its nest invariably, so that when one came to a pair of these birds along the water's edge he had only to walk along by the line of flotsam and look carefully for the eggs. It happened that I was too early for the bulk of these birds but I succeeded in finding several nests, two of which had eggs.

Searching for nests of the Ipswich Sparrow on Sable Island impresses on one's mind a novel peculiarity in the construction of Sable Island. Ow-

ing to the strong winds which are so common there the sand is perpetually drifting, and the patches of grass in which last year's blades are still standing receive, along with the rest of the surface, a small layer of sand. When the birds start nest building they excavate for about an inch into the soil among the long grass. This excavation exposes to view the lower layer of soil which is usually dark and sometimes black for a few inches. If one should be passing by one of these favored nesting places at this critical moment the site of the future nest is very easily discovered on account of the contrast in the color between the uncovered layer of dark soil and the surrounding gray of the sand; but so soon as the bird lines this carefully with the dry grass blades, of which the foundation is usually built, the contrast is ended and the nesting site is difficult to discover. Toward the eastern end of the Island the ground is fairly well covered with patches of crowberry (*Empetrum nigrum*) and these patches are another favorite nesting site in which the discovery of the nest is much more difficult than it is among the comparatively scanty growth of beach grass, which probably contains three-quarters of all the nests built on the Island.

The ornithological situation on the Island is so peculiar from the entire absence of vegetation over three feet high and from the fact that only one land bird nests there that recollections of a visit to this out of the way place will dwell long in one's memory.

Our plate shows 3 of the set of 5 eggs of which Mr. Saunders has written, and are accurately represented as to both size and color. The largest egg of the set measures .77 x .60 and the smallest .75 x .56 Ed.

A Night Among the Clouds With Bicknell's Thrush

By John Lewis Childs

THERE is hardly a bird breeding in the eastern United States the life history, song and general habits of which are so little known as that of Bicknell's Thrush (*Hylocichla alicæ bicknelli*). This is owing to the fact that its breeding grounds are on the highest mountain tops of New England and New York. It is known to breed in the Catskills and on the White Mountains. It no doubt breeds, also, on Mount Marcy and Mount Katahdin. Why the bird selects these very high points for its summer home is probably not so much its love for high altitude as its liking for cool, damp, cloudy weather, as the birds breed also on some of the low islands off the coast of Nova Scotia where the same cool, foggy dampness prevails.

A bird inhabiting only these little-frequented and almost inaccessible places must of necessity be a rare and little-known species, even to many good ornithologists. The Thrushes are our most delightful song birds, and I am familiar with the melodies of the Hermit, Wood and Wilson Thrushes, and it was to hear the song of Bicknell's Thrush and observe something of its habits that I made a trip to the White Mountains of New Hampshire, accompanied by my friend F. B. Spaulding of Lancaster.

We left the Revere House at the foot of the mountains at 2 p. m., on June 17th, to walk to the top of Mount Adams, four miles, where this Thrush was known to be located. We went by the "air line" trail which, though direct, was very hard and it took us five hours to gain the summit. The last mile above the timber line we had to fairly climb on hands and knees up over a broken, rocky cliff so precipitous and rough as to be well nigh impassable. Here we found some ice and snow and a delightfully cool and invigorating atmosphere, and some beautiful alpine flowers blooming modestly in the crevices of ledges and rocks.

After reaching the top we found on the other side a little valley where there was a dwarf, stunted growth of balsam and spruce trees only four to six feet high and exceedingly dense. Here, for the first time, I heard the wiry, high-pitched song of Bicknell's Thrush, not unlike that of Wilson's



EGGS AND NEST OF BICKNELL'S THRUSH

Thrush in many respects, yet less loud and melodious, thinner and sharper, with a charm all its own that was a delight to listen to. We camped here for the night and I listened to the song of this bird, I came so far to see and hear, until after dark. It was fully nine o'clock before the last one stopped singing.

It rained during the night and a cold wind blew furiously. At daylight we found ourselves enveloped in clouds which were drifting rapidly over the mountain tops. This condition of weather continued until we were obliged to start on the return trip at ten o'clock, and gave but little opportunity to observe the bird. A nest, not quite completed, was found. It was situated in one of the stunted firs some three feet from the ground. One or both of the birds appeared to remain near it continuously and resisted all intrusion. The dark cloudy weather did not prevent the birds from singing, but they did not sing so freely as we heard them the evening previous. All their various notes and calls were listened to attentively and we found they had one call which sounded exactly like the note of the Nighthawk.

The only other bird that was abundant here was the Black Poll Warbler which was very plentiful, and nesting.

I left the breeding grounds, among the clouds, of Bicknell's Thrush most reluctantly, as I felt I should never again hear the song of this delightful bird, as it is not likely that I shall again attempt to reach its summer home.

On June 28th Mr. Spaulding again visted Mt. Adams and secured the nest with three eggs which we had previously located. The weather was cold, wet and foggy during the short time he was on the mountain—9 a. m. to about noon. The cold weather (40 degrees) made the birds so quiet that he did not hear a Bicknell note during his stay, and was unable to find any other nests. The nest was taken *in situ* as shown in accompanying photograph. The eggs are distinct in coloring, being a lively bluish green, finely specked with brown. They are exceedingly handsome, by far the most beautiful eggs of the Thrush family.

Recollections of the Passenger Pigeon

By Mr. John Burroughs

HE last great flight of the Passenger Pigeons up the Hudson River valley was in April, 1875, when they flew all day. There was hardly an hour during the day when one on looking up could not see a great cloud of these birds going north. In my boyhood days, nearly every time we had a flight of Passenger Pigeons they nested in the Neversink Valley of the Catskill Mountains. They did not come every year, but would usually come every beechnut year, as they fed largely upon beechnuts. They used to nest in the valley of the Neversink about thirty-five miles from the Hudson River. They nested in trees for miles in extent, and everybody that had a gun would go in there and shoot the breeding birds.

I was never there myself, but I have talked with others who have been there and they said there would be a perfect fusilade, reminding one of a field of battle. The female would sit until noon and then the male would come and relieve her and the hunters would get a chance to shoot both male and female; but the birds used to go right on taking care of their young as if nobody was there, but hundreds and thousands of nests were broken up and destroyed. This went on for a great many years and during that time the birds used to spread all over the country for food, ranging for twenty miles or more. There was such a number of them that they had to go a great distance at times to find a sufficient food supply, and they frequently came through Roxbury, Delaware County, where I lived.

From 1844 to 1860 I used to see them come at certain times in the spring and fall in vast numbers, but always in greater numbers in the spring than in the fall. In the fall they would come in small flocks to the buckwheat fields and hover around the beech woods where we used to hunt for them, but the great flights always took place in the spring when millions of them could be seen. I have seen the sky literally covered with Pigeons. You could not look up at any time without seeing a great mass of them sweeping across the sky. They would stop and feed in the beech woods wherever the snow was off, and the hunters used to net them. After baiting them and getting them to come to a certain spot they would set their nets and would build bough-houses where they could hide, with a rope running from the net to the hiding-place, and they used to catch thousands in this way; yes, I suppose tens of thousands. I have heard it said that they would sometimes get their nets over so many Pigeons that the birds would

spring up with such force that their weight would break the net, and a great many of them would escape. Of course, the united force of so many hundred Pigeons under a net would be very great. In netting them stool Pigeons or live birds tied with a string were often used. The live birds would flutter up into the air and then the hunters would pull them down again when they saw the flock coming over so as to attract their attention, and down the flock would come.

I once knew a farmer who used to bait them in March by taking the snow off the ground, and after the Pigeons got to coming there he would shoot at them from a convenient blind. The gun was an old smooth-bore rifle loaded with shot, which when discharged into a thick bunch of Pigeons would cause tremendous slaughter.

I have seen the Passenger Pigeons going through the woods like a blue wave, rolling along, filling the woods with the sounds of their wings and their voices. Those in the rear would be constantly flying over those ahead, so that as they went through the woods picking up the beechnuts they looked like a blue wave. You could hear them for half a mile. Their note was at this time a very soft, child-like call like the voices of little girls, so very soft and sweet was their piping. They would remain but a few days and were seldom ever seen later than April. When they first came they were usually very tame, but would get exceedingly wild after they had been fired at a few times.

I think the last time they nested anywhere up in that section was in 1868, and then we shot the young Pigeons in June. They spread over the country there near Roxbury eating sprouted beechnuts. The beechnuts by that time, of course, had all sprouted and they spread through the woods everywhere picking up these sprouted beechnuts, and we shot a good many. I hunted with the boys and we killed a good many.

The last Passenger Pigeon I ever saw, and which I killed, was in 1876. It was a solitary one in the woods of the Hudson River valley. I was hunting and seeing the bird, killed it.

* * * *

Personal Recollections of the Passenger Pigeon

By John Lewis Childs

I DO NOT remember of seeing a Passenger Pigeon in Franklin Co., Maine, where I was born and lived until I was eleven years old. In 1867 my parents moved to Buckfield, Oxford Co., Me., and my home was then upon a large farm. In the rear of the buildings was a large hill, partly wooded and partly good pasture. In front was a long stretch of intervalle or meadow through which flowed a small river known as the Nezinscott. On

the opposite side of this stream was a series of cultivated fields part of which were, the first season, devoted to buckwheat.

In August a flock of Wild Pigeons appeared and came daily to feed upon the ripening grain. The flock probably contained several thousand individuals, and while the bird was not uncommon in this locality, or had not been in years past, the appearance of so large a flock, coming regularly to the same feeding grounds, was considered fortunate and all our neighbors turned out with shot guns to enjoy the sport of pigeon shooting, which they said was "getting scarce". It was rare sport for me. Though but eleven or twelve years old I could handle a shot gun or rifle almost as well as I can now, so day after day this flock of beautiful birds was pursued by myself and others, and pigeon pot-pie was for some time a staple article of food at our homes. The birds could often be approached while feeding upon the ground. They would also settle upon the rail fence which enclosed the buckwheat field, covering the rails so completely that they looked like a chain of living birds, and by taking a position where one could fire at them "rakewise", as the natives called it, 8 or 10 might be bagged at a single shot from any old muzzle-loading gun. When fired at the flock would rise and after circulating about for awhile settle upon two or three immense elm trees which grew near the river, covering every limb so densely that there did not appear to be room for another bird. At times they would fly to the hill back of the house and alight, sometimes upon the ground and sometimes upon the trees of the wooded portion.

When the flock was thus moving about the birds usually flew low enough to be killed by shooting at them from the ground, and a discharge of many firearms sometimes followed the flock wherever it went, as men and boys were stationed at various points on the route over which the birds generally moved. According to the best of my recollection the flock visited our buckwheat patch for a period of two or three weeks, not every day, but nearly so, and before they left for good I believe that at least one-half of them had been killed.

The following year a much smaller flock visited the same haunts, but the persistency with which they were hunted soon drove them away for good. I remember taking my shot gun to the harvest field when we went to work that I might be prepared for the flock or for any stray individuals that might fly over, as was frequently the case. Taking firearms to the work fields when Pigeons were about was a common practice among many farmers at that time.

The next year only a few Pigeons were seen and everybody lamented the lack of sport. The only ones I killed that year was a pair I came upon unexpectedly in September while in a piece of open beechwoods grouse hunting. They were upon the ground feeding, and by a lucky shot I bagged both as they took wing.

They were the last wild Pigeons I have ever seen alive in that or any other locality, with one exception, and that is open to question. Some 30 years later—in 1898—while visiting the old farm and the former haunts of the wild Pigeon, three birds flew over my head at a considerable height which I firmly believe were Passenger Pigeons. As I had not seen one for thirty years I may be mistaken, but they certainly were not Mourning Doves, and from the size and shape of their tails, color and manner of flight I feel sure they were not domestic pigeons.

As I looked at them the thrill of a sportsman's pleasure and excitement tingled through my nerves the same as it did when as a boy I pursued the same game in the same locality with so much fervor. Since that time I have hunted the wary waterfowl and the wild turkey, chased the fox, the deer and the bear, but none of these have afforded me the intensity of excitement and delight which I used to experience when a flock of wild Pigeons was approaching my ambush, or when I have heard the flock rise from the hills top back of our home in such numbers and with a noise from many wings that sounded like a distant peal of thunder; or when I have crept up over the brow of the same hill and looked straight into the top branches of the oak and poplar trees on the other side and beheld hundreds of these birds within gun shot, unsuspicious of danger, the beautiful iridescence of their plumage flashing in the sunlight and all their glistening colors mingled with the green foliage of the trees, resplendent in lights and shadows. To this day I rejoice to reflect that in that position I found more pleasure in watching the birds than in shooting at them, and that I enjoyed to the fullest extent the most beautiful sight in nature it has been my privilege to behold. If men and boys in general found the same degree of sport in Pigeon hunting that I did at the time they were so abundant, it is no wonder that the species has become extinct or nearly so. The sight of such immense flocks of those birds, so beautiful and so desirable for the table, made Pigeon shooting the most fascinating of all game hunting.

In those days no one ever dreamed of the birds becoming extinct, or even scarce, so great were their numbers. The amount of grain they destroyed was often a serious loss to the farmers and did much towards encouraging the wholesale slaughter to which the birds were subjected.

I once heard an old settler tell of the great abundance of the wild Pigeons in Maine during the beginning of the eighteenth century, and that a common way of killing them off was to dig a long trench in which a quantity of wheat was scattered to attract the birds. When they came and settled down to feed, filling the trench to its utmost capacity, one discharge from some advantageous point of an old flint-lock musket loaded with a handful of shot would often result in the killing of as many as 75 birds.

In those days wild Pigeons were hunted for three distinct reasons—as sport, as an article of food, and because they were destructive to crops.

Passenger Pigeon Nesting in Minnesota

WITH SKETCH OF NESTING SITE DRAWN FROM MEMORY

By W. Otto Emerson

IN THE general notes of the "Auk," July, 1897, is mentioned (p. 316) by Mr. Ruthven Deane of Chicago, Ill., that Simon Pokagon had informed him that the Passenger Pigeon had been observed nesting the spring of 1896 along the head waters of Au Sable River, Michigan. There is no published account of the nesting habit, that I am aware of, in the past twenty years.

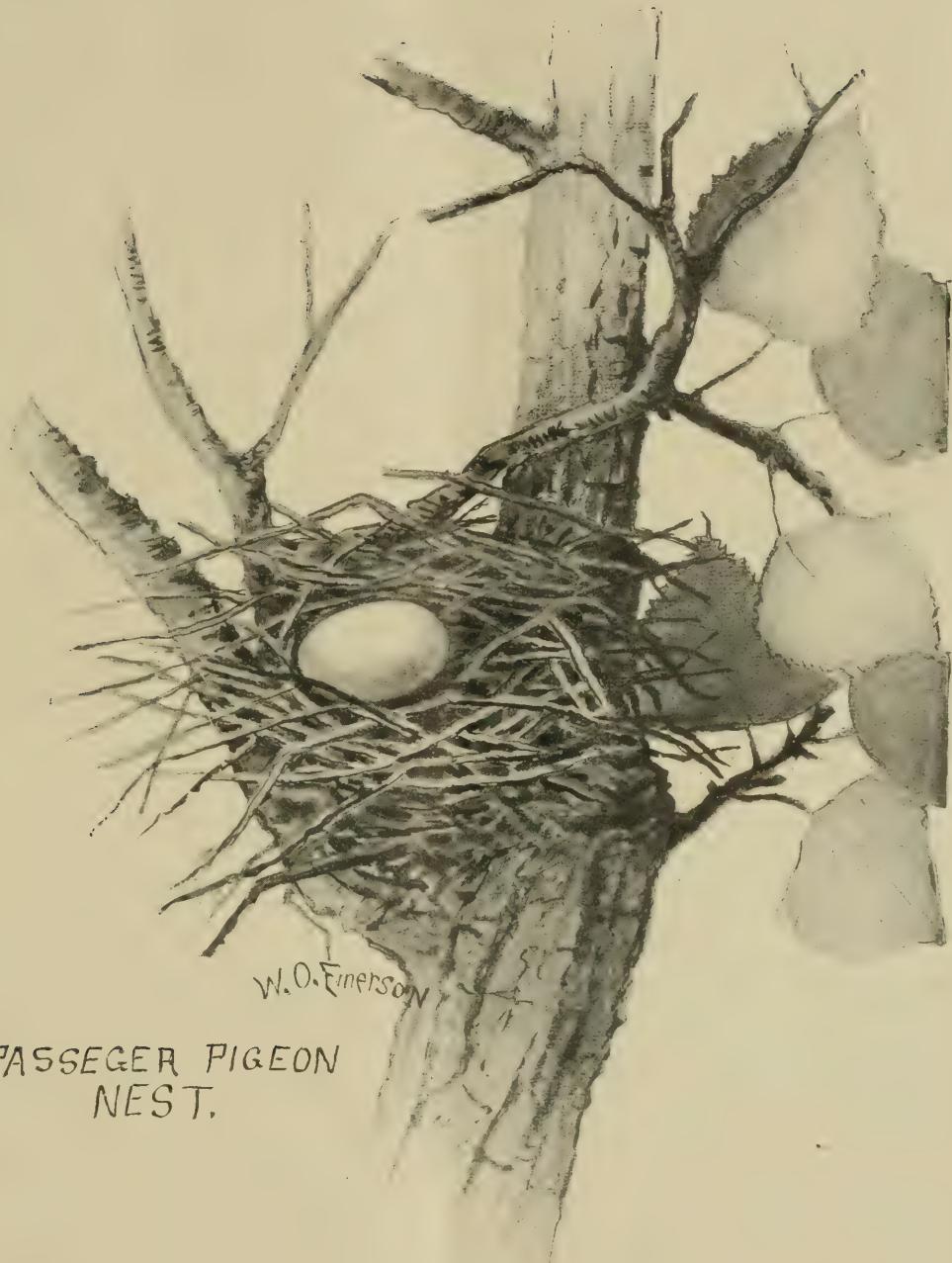
It is with pleasure I am led to give such facts to the readers of THE WARBLER as came under my personal observation in June, 1890, during a visit to Minneapolis, Minn., and its vicinity. While there I had the opportunity of being shown some of the vast breeding grounds of water birds of that region along what is known as the overflowed bottom-lands of the Mississippi river, out from the city of Minneapolis some 16 miles, by my old friend Ewd. S. Stebbins, an oologist of Minn. birds.

It was while photographing and sketching among the thousands of nesting birds of this vast area of shallow waters that we rowed to a long narrow strip of land we noted as having a few straggling cottonwoods over it, between us and the river. It was here we aimed to stretch our stiffened legs from being in the boat and lunch under the shade of a tree, little expecting to find a Passenger Pigeon nest. On going under the first old cottonwood, that was badly weather-beaten, I saw up some 40-odd feet a dove's tail showing over a slightly built twig-nest. As the bird heard our voices she flew and I saw my first Passenger Pigeon since leaving my prairie home in old Illinois twenty years before. Calling my friend Stebbins to the tree I showed him the Pigeon's nest and it was not long before he was up to it and down with the single egg it contained.

As I remember the egg it was about six days incubated and resembled the common dove's, only larger. It was given to my friend for his collection. During our stay of an hour or more on this waste of land the Pigeon did not return, nor were others seen by closely hunting over the remaining trees.

The drawing here presented is of the nest and egg as it appeared, from my notes. The nest was placed on a forked limb close to the main body of the tree. Many of the branches were nude of foliage and dead, and the tree stood all alone by itself, as all others did on this strip of land. Off over by the river side they were of a thicker growth, and this may account for the Pigeon choosing an open situation as a better outlook to a protection of her humble home.

In the years 1860-68, when a lad about my grandfather's farm in Illinois,



PASSEGER PIGEON
NEST.

W. O. Finerson

I have watched the coming and going of the countless clouds of Pigeons as they flew morning and night, so as, at times, to hide the sun for a half hour at a time as they flew back and forth from the forests two miles away. I well remember being shown the great patches of tree tops all bare and broken down by the endless numbers of Pigeons roosting in the woods, and my grandfather showed me and told me how, with long poles, at dusk they would go and kill them for the Chicago game markets. I wondered at it, as they drove up at dark with the great loads of barreled Passenger Pigeons, little imagining that in my lifetime there would come a day when the appearance of one in a locality would be recorded in one or more of the ornithological journals.

The exact location of the pigeon roosts mentioned was 60 miles northwest of Chicago, in Mc Henry county, Ill., in the old Indian forests which my grandfather bought of the famous Black Hawk Chief, of the Sac and Fox Indians, who was born in 1767 and died the year 1838. He sold the forest to my grand-parent Wm. M. Jackson, first U. S. land surveyor of the city of Chicago at the time of old Ft. Dearborn.

* * * *

Early Breeding of the Mourning Dove

(*Zenaidura macroura*)

By John Lewis Childs

SOME portions of Suffolk County, Long Island, appear to be favorite resorts for the Turtle or Mourning Dove, which, at best, is a rather rare bird so far north as New York. I have seen more of these Doves on the extensive game preserve of the Wyandanch Club at Smithtown, Long Island, than anywhere else. The tract or area controlled by the club is about thirteen thousand acres in extent, and the Doves appear to like dry, sandy stretches of land covered more or less with scrub-oak, and in places with heavy chestnut timber and pines. Even wild scrub-oak tracts that have been more or less burned over are favorite haunts.

It was in a situation of this sort that I found a nest of the Mourning Dove on April 20th last. It was located upon the ground at the foot of a small decaying stub, and was plainly visible for a distance of fifty feet from all sides. The bird flushed at my approach, and on going to the nest I found that one of the two eggs was about to hatch, as it was already pipped in three places. The nest consisted of only a few small sticks and pine needles which has been collected together and laid squarely on top of the ground, not so much as a depression in the soil to give shape or semblance to a nest.

I regret very much that I did not have a camera with me with which

to photograph this most unusual nest which contained eggs that were hatching at a most unusual date. Five days later, on April 25th, I again visited the nest with a view to photographing the young birds, but when I reached it there was nothing to be seen but the egg shells and a considerable quantity of feathers, both large and small. Evidently the parent bird had been captured on the nest by some four-footed or sharp-taloned marauder.

* * * *

The Tolmie Warbler in Wyoming

(*Geothlypis tolmiei*)

By P. B. Peabody

N brush-grown canyon bottoms, amid the aspens, on hawthorn-studded hillsides amid masses of poison oak, and amid thickets of wild gooseberry along the creek-sides—here haunt the Tolmie Warblers. (If you are a gentleman of leisure, call them Mac Gillivray's).

The *Geothlypis* races are sharply distinguished from other ground Warblers by striking mutual similarities, yet each has its own traits. As one might conjecture, the Tolmie Warbler has many points of habit in common with its cousin, the wearer of crape. It loves the thickets for its haunting and its feeding, though the nests are placed, as a rule, in more open situations. It is both restless and familiar, noisy and whilomly silent, and it makes a deal of fuss, when man is about, after its young have burst their bonds.

The male Tolmie is a most fascinating creature. He pipes, restlessly, amid the undergrowth, his “jillis-jillis-jillis,-whittle,-whittle”, varying his ditty with an occasional laconic “jit”, especially if a human intruder be near. And when you chance to sight him,—which you are able to do, if expert and wary, about once in a life-time,—he seems to bear about with him the consciousness of his rich, quiet beauty in all the elements of his bearing, even to the flirting of his tail.

As with the Mourning Warbler in Northern Minnesota, so with this member of the genus in Wyoming, the arrival is late, in spring, and the coming fairly simultaneous. The habit is greatly local, and a pair, once located, would seem seldom to leave the immediate environ of their chosen summer home. As with its near relative, the nesting of the Tolmie Warbler follows soon after its arrival. By June 10, as a rule, the nests are finished and the sets complete. In Crook and Weston Counties, Wyoming, sets of five would seem to predominate, though layings of four seem common. Nearly one-half the nests found have contained four eggs. The nests are normally of

grasses, bark-strippings, weed-stems and horse-hair. Rootlets enter largely into the nest-linings. The typical nest is rather shaggy without and exquisitely neat within. Most of the nests are quite deeply cupped, and some of them markedly so. The nests are uniformly smaller than those of the Mourning Warbler.

More readily, by far, than her wilder cousin, does the female Tolmie flutter from her nest when one-who-knows-how invades her domain. This fact makes the search for the nests of this Warbler a matter of rarest fascination. Once, on a 12th of June, I set out into Cambria canyon after my favorite Warblers. The coal train had just thundered by, on the steep down grade, when I heard the sweet wierd song of a male Tolmie. Then, turning aside from the railway grade, I stepped into a winding wagon road that crept into the mazes among the giant cottonwoods along the creek. At the second flick of my willow wand a Tolmie Warbler fluttered from her nest, ensconced between a tiny hackberry and a willow, where these were interlaced amid a rose-bush tangle, at two feet in height.

The actions of this female were thoroughly typical. She disappeared, at the first, among the undergrowth, but presently emerged and flitted about, near me, placidly and unconcernedly iterating her characteristic "jit". But the nest contents were a great surprise. In the depth of the rootlet-and-hair-lined cup there lay *six* fresh eggs. All were remarkably uniform in markings yet rather abnormal in character, resembling eggs of *Parus* rather than those of *Gothlypis*.

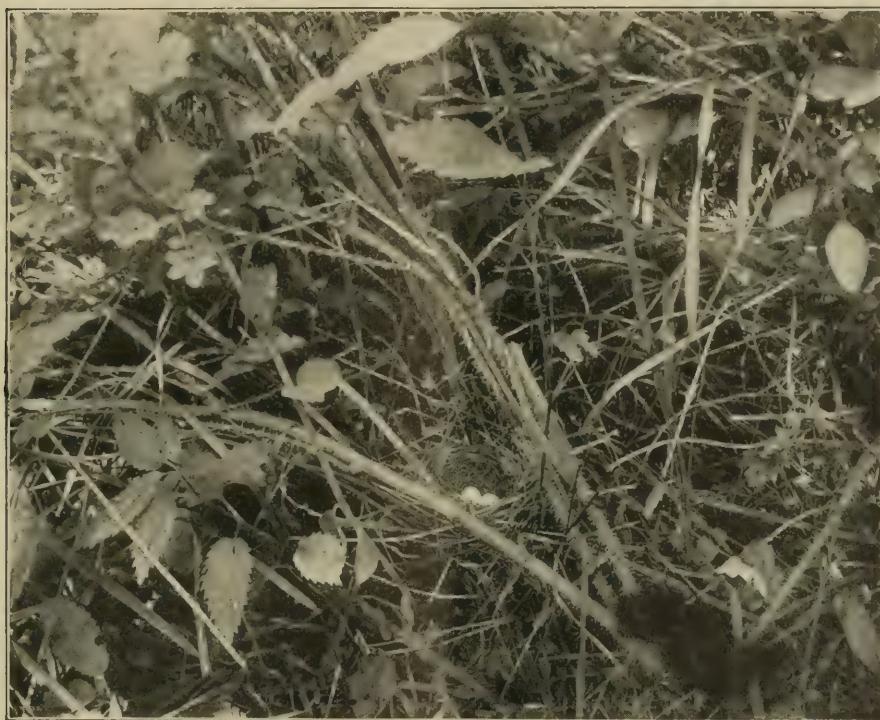
The normal egg of Tolmie is of a rather glossy white character, and the usual markings are in blotches rather than in spots. Rich red-brown is a dominant color, this being normally blended or in part overlaid with lilac or pale cinnamon. But there are many variations. One remarkably handsome 1905 set is delicately hair-lined and stippled with warm red-brown. Another, most odd in markings, is covered with faint, delicate maps of the American Possessions, one egg of the set being capped with an exquisite blending of warm and pale brown tints.

The nest of this Warbler is usually rather deeply hidden in the leafage. It may be placed at any height from a couple of inches from the ground up to a couple of feet, possibly more, on occasion. Vertical crotches of rose and gooseberry appear to be most favored, yet many nests are supported by surrounding stems and branchlets of all sorts, living and dead. This is particularly true when the site is near the ground.

As indicated above, the locations are in rather open brushland, amid swampy places. Occasional nests are placed quite in the open, as the following most happy experience will show. Passing through an open area of small aspen, bordering a series of springy willow thickets, that strange, occasional telepathic experience of nest finding was vouchsafed me. Almost sub-consciously I found my vision resting upon the up-cocked tail and pa-

thetic eyes of a sitting Tolmie. Her nest was a narrow affair, but very deep, and its external had most evidently been built by dragging into the site a number of long, large grass-stems. It was squeezed between the vertical stems of a tiny rose bush beside a little aspen, one side being supported by two or three shafts of *equisetum*.

Without flinching,—save when the camera shutter clicked for the opening of the exposure,—the dainty creature whom I had surprised upon her eggs remained in place until the focusing for a second exposure was begun.



NEST OF THE TOLMIE WARBLER IN WYOMING

But she had endured enough. Silently she slunk away, yet in a moment was talking to me, familiarly and near-by, as the camera did its work.

Thorn bushes are favored haunts of the Tolmie Warbler. But once, however, have I ever found a nest in a thorn bush. This nest, at two feet high, contained four eggs of rarest beauty, while the bush, curiously enough, was the very same from which I had shot a female for identification but three weeks before. Troth, the male comforted himself full soon!

The reader will infer, from what is written above, that the Warbler of our study is found, in the indicated region, along the creek-watered canyons

only. This is but relatively true, since I have found a pair or two in the dense brush that grows along the seams and depressions of the sempiternally springy sides of the base of Sundance Mountain.

The studies made in this location illustrate, essentially, the marked change in attitude and manner of the *Geothlypis* (and other) Warbler species after the eggs are hatched. Gingerly tip-toeing my way amid luxuriant growths of poison oak, beneath the welcome shelter, withal the fierce heat of June, afforded by primeval burr-oaks, I heard the "jit" of a MacGillivray Warbler uttered in a tone that told a tale of anxious motherhood. In a brief instant, as my presence in the sacred precinct became known, an added jit-ting made it plain that *father* was anxious, too.

Oh, the rare, sly delusions into which that excited yet cunning pair of birds repeatedly led me! Hiding places were rare,—for all the hated "ivy". Yet finally, despairing of making a record in any other way, I found a snug covert among some favorably situated willows. But even with this incentive to un-suspicion it was long before even the male bird ventured to feed his offspring. As he finally disappeared, with a swift onrush, into a little clump of willows, on the woodland margin, I rushed to the spot and was fortunate enough to flush the last of the nestlings from the place where he was born, this being a rough nest, heavily lined with black horse-hair, and set a few inches above the ground amid the willows.

There came a brave little rain-flood down Cambria canyon yesterday, and going up this afternoon, as the shades were lengthening and the mid-afternoon canyon-sunset drew on, to see how it fared with my favorite bird-dwellers, I heard, amid the mockery of a long-tailed Chat, the family conversation of a pair of Tolmies whose first laying was despoiled by a heartless ornithologist that I knew. The spot was but a hundred feet from the tangle of roses and nettles wherein lay hidden the nest figured in the accompanying illustration. On the steep bank, beside the creek, a very bower of roses nodded in the waning sun-glow, and beneath their shelter and their beauty and their fragrance my little Tolmies were talking softly to each other. Contentedly,—so, at least, I love to imagine,—jit followed jit; and "jit", at last, gave way to "jillis"; and the "jillis" wafted out its cadence into a morendo,—"Jillis,—jillis, jillis, jillis,—WHITTLE—whittle—whittle".

THE WARBLER

SECOND SERIES

VOL.I. NO 6



AIMOPHIA RUFICEPS
(RUFOUS CROWNED SPARROW)

Plate VI. Eggs of the Rufous-Crowned Sparrow

(*Aimophila ruficeps*)

THIS plate shows three eggs of a set of four of the Rufous-crowned Sparrow which together with the nest are in our collection. The size is exact, and the color as nearly exact as it is possible to reproduce it—white with a very delicate tinge of greenish blue, a shade extremely rare and beautiful. We know of but one other North American egg that has this peculiar tint—that of the Arizona Junco (*Junco phaeonotus palliatus*.)

This set of Rufous-crowned Sparrow is one of the last, if not the very last set collected by the late lamented Chester Barlow of Santa Clara, Cal., and is the fourth or fifth set of this species known to science. It was taken April 27th, 1902, at Laguna, Cal. Incubation slight; nest composed outwardly of grasses, grass stems, etc., well woven, and lined with horsehair; placed on a hillside beneath a small sage, the nest being sunk flush with the ground and well concealed. Bird flushed and was very secretive, not nearing the nest for a considerable time, when she was collected.

The four eggs measure, respectively, .81 x .60—.79 x .59—.77 x .59—.76 x .57. [Ed.]

* * * *

Hide And Keep Quiet

WHILE wandering through the woods in Maine on June 10th I came suddenly upon a young Hermit Thrush just out of the nest and able to fly a few feet. His cry brought the parent bird which flew almost into my face in a vain endeavor to turn me from the pursuit of her offspring. Failing in this, and after the young bird had made several short flights over the ground to get away, the old bird flew down to him and assisted him in concealing himself among the dry leaves. As I advanced to this spot the young did not again flush until I fairly touched him with my foot. It was interesting to see the old bird after failing to drive me away make the youngster hide and keep quiet. [Ed.]

* * * *

Hawk Eat Hawk

AT a taxidermist's establishment in Portland, Maine, last June I was shown a very fine specimen of the Duck Hawk mounted with the remnants of a Sharp-shinned Hawk in his talons which he was feeding upon when shot. This is the first instance of hawk eat hawk that ever came to my attention, and I would be glad to know if others have met with similar instances. [Ed.]

In the Haunts of the White-Throated Sparrow

(*Zonotrichia albicollis*)

By H. Nehrling



FEW miles to the west of where I spent my boyhood days the great Sheboygan marsh stretches out over an area of several thousand acres. In those days—in the Fifties of the last century—this part of Wisconsin was only thinly settled, and bears, wolves, lynxes and foxes found a safe retreat in the fastnesses of almost impenetrable evergreen thickets. The outlet of beautiful Elkhart Lake, one of the most exquisite sheets of blue water imaginable, and at present a famous summer resort, passes through this swamp, forming the Sheboygan River, which pushes its tortuous course through white cedar and tamarack swamps, and magnificent woods of white pines, sugar maples, beeches, birches and lindens, emptying its water into Lake Michigan at Sheboygan.

The entire region is very picturesque. In the vicinity of Elkhart Lake it is very hilly, full of glades and glens and very rich in murmuring springs and prattling brooks. In years gone by the white pine, the sugar maple, the beech, birch and linden, with a few scattered butternut trees and hickories constituted the predominating forest growth. The hillsides are covered in many places with dense red cedars, juniper-bushes, white-thorns, stag's horn sumach, wild crab and wild plum trees. The marsh itself is densely overgrown with a second growth of white cedars and tamaracks, all the tall specimens which made such a fine and lasting impression in the days of my youth having been cut down for fence posts and telegraph poles.

In addition to these species we find numerous single specimens and groups of black-spruce, alder and elder bushes, ashes, willows, dog-wood, viburnum, dense upright honeysuckle (*Lonicera oblongifolia*, *L. parviflora* var. *Douglasii*) and many others. The deep mucky soil is always moist and the growth of touch-me-nots (*Impatiens fulva*), of Indian snuff (*Helonium autumnale*), of cow-parsnip (*Heracleum lanatum*) and of dense masses of nettles along the edge of the swamp is very rank.

Following one of the few old woodsman's roads or some old trail or path leading into the interior we are taken by surprise—we are in a veritable paradise of the most exquisite and delicate flowers and a wonderfully

rich bird-life. All the coarseness seems to have been shut out. We are greeted by the gleeful voices of innumerable Warblers and other birds loving the seclusion of the swamps. A dense and soft carpet of sphagnum moss covers the ground everywhere and out of it grows the aromatic wintergreen (*Gaultheria procumbens*), the Labrador tea (*Ledum latifolium*), the star flower (*Trientalis americana*), the dwarf cornel (*Cornus canadensis*), the twin flower (*Linnæa borealis*), the clintonia (*Clintonia borealis*) and cranberries. Ferns of many species in single clumps or in groups and masses attract our attention. Pitcher plants (*Sarracenia purpurea*), clumps of lobelias and hundreds of other plants add beauty and variety to this floral medley.

The jewels among these moisture-loving plants, however, are the different species of terrestrial orchids, found everywhere among the shrubs, along the paths and in small openings. The delicate ram's head (*Cypripedium arietinum*) begins to flower early in June, while the beautiful and showy stemless lady slipper (*C. acaule*) is rarely found in its full glory before the tenth of the month. A few days later, or often at the same time, the large yellow lady slipper (*C. pubescens*) opens its magnificent blossoms. The last and most exquisite of all, the gem among gems, the moccasin flower (*C. spectabile*) is usually in full bloom by June 15, displaying its pink purple-veined blossoms everywhere. The last two species grow in magnificent clumps among the wintergreen, delicate ferns, clintonias and twin-flowers. The strong and pleasant odor of the white cedar fills the air, particularly during warm days. Although an attempt has been made to drain this large swamp, little as yet has been accomplished, and I sincerely hope that ways and means may be found that this unique spot may be preserved as a reservation for game, birds and wild flowers.

This is nature's realm. It is the prettiest, wildest, weirdest, most unique conglomeration of paradise and perdition I have found in Wisconsin. Not everybody can enter it during summer without repulsion. Only the few blessed, the lovers of nature, may penetrate into its depths without fear. They only will find pleasure, enjoyment and food for their intellect. The society man, the common mortal finds no pleasure in penetrating the stronghold of millions of mosquitoes, stinging flies, oppressive heat, fallen trees, pools of water, poisonous nettles and other adversaries. To him such places only have horrors, no pleasures. The lover of nature, on the other hand, finds in them ideal spots of poetry and beauty, and he searches them with love and enthusiasm. I have always looked at the great Sheboygan marsh as a veritable paradise of bird life. Within its sheltering arms is heard the most conspicuous of sylvan utterances, the thundering sound of the Ruffed Grouse. Here we may still find the beautiful Wood Duck or we may come across a colony of Blue Herons. In the seclusion of this swampy retreat the Woodcock feels perfectly safe.

During the last few years while residing in Wisconsin (from 1895 to

1901) I paid particular attention to the many species of Warblers inhabiting the swamp or the adjoining woods. Late in May and during the entire month of June all the thickets, the spruces, the tamaracks and white cedars resound with the clear notes of many species. Most of these songs have a strong family likeness, but they are easily distinguished by the expert observer who has a good ear for the little differences in bird music.

Though I have not had the time to spend many days in this mosquito-infested swamp, I am certain that quite a number of species breed there, having found several nests of the Golden-winged Warbler and the Maryland Yellow-throat on the ground, while on June 10, 1901, I was fortunate enough to discover the nest of the Black-throated Blue Warbler in a small red osier only about twenty inches from the ground. On the same day I found a nest of the most beautiful of all our species, the Blackburnian Warbler, in the top of a dense black spruce about 8 feet from the ground. The year preceding I had discovered a nest of the Black-throated Green Warbler in a spruce only about a hundred feet from the spot where I found the Blackburnian's nest. Yellow Warblers, Chestnut-sided Warblers and Redstarts are very numerous in the adjoining woods along the edge of the swamp and the very characteristic and unmistakable lay of the Parula Warbler is frequently heard in the tops of tall tamaracks and other forest trees.

Other species observed during the entire month of June, and that very likely breed here, were the following: Bay-breasted, Cerulean and Pine Warblers, the Orange-crowned, Connecticut, Wilson's and Canadian Warblers. It may be interesting to state that I also observed the Prothonotary Warbler and the Worm-eating Warbler—both decidedly Southern species which I found very common in southern Missouri—several times during June. Other species are exceedingly abundant during the spring and fall migrations, and close observations of painstaking and reliable ornithologists may reveal the fact that still more species may be summer residents here.

Catbirds are very abundant, and so are the Swamp Sparrows. Thrashers are numerous in the thickets of the woods particularly where dense thickets of viburnum (*V. prunifolium*) and wild crab trees, overgrown with grape vines, occur. Baltimore Orioles, Wood Thrushes, Yellow-billed Cuckoos, Scarlet Tanagers, Robins, Wood Pewees, Indigo Buntings, Song Sparrows, Cedar Birds, Chipping Sparrows, Rose-breasted Grosbeaks, Red-eyed Vireos and Phoebe are very abundant in the woods and parks around Elkhart Lake.

Different songs strike our ear, while entering and roaming around in the swamp. The most beautiful and characteristic chant, nay the most enchantingly sweet lay after that of the Hermit, re-echos from all sides in the early morning hours and again when the evening falls. We hear the notes near us and far away. Their charm is indescribable. It is the ideal song and every note penetrates deeply into our hearts. It can be compared to

nothing else which ever falls upon our ear:—we hear the Veery's sweet song. Once heard in such surroundings and at such hours of the day it always keeps its place in the memory of the bird lover. I have found in one season five nests, all on the ground and all embedded in sphagnum moss and surrounded and sheltered by ferns and other dense plants.

The Hermit's song is also heard now and then early in June, but as I have never had an opportunity to listen to it later in the season, I am inclined to believe that all move a little farther northward.

Another characteristic song that mingles with the sweet strain of the Veery is that of the White-throated Sparrow, a very abundant species in the fastnesses of the swamp. During the month of May the gardens in Milwaukee swarm with these birds. Wherever thickets of lilacs, mock oranges, upright honeysuckles, weigelias and spireas occur this exquisite songster is heard. The first migrants appear late in April and the last stragglers suddenly disappear during the last days of May. I always was of the opinion that their breeding range could not be far away, but I never was able to detect them in the swamps around Wisconsin's metropolis.

While entering the Sheboygan marsh on June 5, 1898, in company of my friend, Mr. John A. Brandon, the sweet "ah! te-te-te-te-te-te-te-te-te" fell on our ears from all sides and we knew that we had discovered the southernmost limit of the White-throated Sparrow's breeding range. Occasionally, perhaps, the bird may be found breeding further to the south but there is no doubt that it nests in numbers from this locality northward. In his excellent book "Our Birds in their Haunts"—one of the most charming and valuable bird books that ever have been written—Rev. J. H. Langille gives the following description of the strain:

"The charm of the song is principally in the pathos of the tones, which resemble those of the song proper of the Chickadee, being an inimitably tender and vibrating or tremulous whistle. There are few bird songs which are so affecting to the aesthetic nature as is this simple pastoral. The tenderest and most sympathetic ideas with a tinge of melancholy, find their expression in these strangely characterized notes, which, as Thoreau says, 'are as distinct to the ear as the passage of a spark of fire shot into the darkest of the forest would be to the eye'. All such representations of this song, as *pea-body, pea-body, pe-a-body*, or, *all day whittling, whittling, whittling*, or, *ah! te-te-te-te-te-te-te-te*, are mere caricatures, furnishing at best a rude suggestion of its plaintive, tender melodiousness".

The White-throated Sparrow represents the nobility in his family, being of rather retired, quiet and aristocratic habits, never mingling with the common crowd of sparrows. While singing he also shows his noble port, at such occasions invariably selecting the top of a small tree or tall shrub for a perch. His pure white throat immediately characterizes him. While

entering the swamp we could hear five or six rivalling with each other in pouring forth their sweet lays.

Our main object was to search for Warblers' nests and we succeeded in finding a few partly completed structures of the Black-throated Green and the Blackburnian Warblers in the center of small black spruces. Both birds were observed while carrying nesting material to their half finished domiciles. Near a small alder bush (*Alnus serrulata*) embedded in sphagnum moss, and protected on one side by a rotten log covered with ferns, I found the nest of the Veery, containing four eggs of a pale greenish blue color. It was built of barkstrips mainly of the white cedar, and of grasses and was lined with finer material of the same nature. Being surrounded by a dense growth of cranberry and huckleberry bushes, wintergreen, clintonias and cypripediums, among which the nest was snugly hidden, it was only by accident that I discovered it. I flushed the bird from it while walking toward an old stump, which contained a nest of the Chickadee—a very common bird in the swamp.

In the immediate neighborhood of this nest, but on the other side of the road, I noticed a White-crowned Sparrow suddenly disappear in the center of a dense clump of ferns and cypripediums. I presently approached the spot in order to search closely, when the old male appeared, showing much distress and uttering constantly its very plaintive notes. This gave me the assurance that I was in close proximity of the nest. I carefully parted the ferns and the other plants with my hands and I soon was rewarded with a very beautiful spectacle. There sat, underneath a most charming vegetation, on a soft bed of sphagnum moss, wintergreen and twin-flowers snugly on her nest the female. Quietly and without a motion her beautiful eyes glanced at me. When approaching too near with my hand she flew off, feigning lameness and joining the male near by. Both displayed much uneasiness and constantly uttered their notes of embarrassment.

The nest was a rather bulky structure composed of grasses and leaves and barkstrips and was lined with finer barkstrips. On one side stood a small spruce and near by a thicket of white cedars and deciduous shrubs. It contained four eggs of a pale greenish white ground color washed all over with rusty brown and chocolate brown spots. Mr. Brandon photographed the nest after some of the bushes and plants screening it from view had been removed.

Philadelphia Vireo at Close Range

(*Vireo philadelphicus*)

By John Lewis Childs

JUNE 10th found me at Upper Dam, Rangeley Lakes, Maine, impatient to observe a few rare birds known to breed in that locality. One of these was the Philadelphia Vireo, and it was this bird that I first started to look for. Not far from the camp where I was staying is a piece of woods composed principally of young poplar and white birch, and to this I repaired. I had not proceeded far before I heard a Red-eyed Vireo singing on my left and another one on my right. On listening closely I observed there was a slight difference in the song of these two birds, but I believed it was nothing more than individual variation and had little doubt but that both were the Red-eyed species. Knowing, however, that the song of the Philadelphia was similar to that of the Red-eyed I thought it worth while to look up the bird that was singing on my right. A few steps brought me to it, as it was not so far away as the notes led me to believe, and to my delight I saw a live Philadelphia Vireo for the first time in my life in his natural surroundings.

The bird was on the lower branches of the tree and eyed me with evident curiosity, exhibited no fear, and came to within eight or ten feet of where I stood, and for about ten minutes I observed him at close range. The color of his eyes was black, and in all respects he was perceptibly smaller than the Red-eyed. The bird seemed as much interested in me as I was in him, and we studied each other from all points of view, during which time the singing did not cease but was subdued to very low, soft throat notes which sounded far away. It was interesting to watch the swelling of his throat as he produced these notes without opening the mouth. His mate soon appeared and I began a diligent though unsuccessful search for their nest.

I visited the locality again in the afternoon and the next day and found both birds about in the same place. In moving about they would seldom go to the tops of the trees like the Red-eyed, but seemed to prefer the lower branches, and were at all times, when I saw them, very tame.

Birds Breeding Within the Limits of the City of New York

(Continued from No. 2)

By John Lewis Childs

The Chipping Sparrow

(*Spizella socialis*)



HIS well known little Sparrow is of an extremely social nature and loves to dwell near the habitation of man. It breeds abundantly in all the suburbs of the city of New York, and to some extent in Central Park. I am inclined to think that fully as many Chipping Sparrows nest within the city limits as do Robins. They arrive quite early from the South and their long-drawn trill is first heard on some warm sunny day in April. The song is pleasant but not particularly musical. They do not begin to build their nests until the foliage is fairly well out to afford concealment and protection from the elements. Apple and pear trees are favorites for nesting sites, though almost any tree including evergreens may be used, also shrubbery, hedges, arbors, vines, etc. A thick hawthorn hedge affords an ideal site for them, as does also the barberry (*berberis*). I have known Chipping Sparrows on several occasions to build in a barberry bush not over two feet high, the nest carefully concealed down in the center of the bush and not over a foot from the ground. For years a pair have nested in a honeysuckle which is trained up one of the piazza posts of my residence close to the steps where people pass all hours of the day within touching distance of the nest, yet they managed to construct the nest and hatch out a brood before being discovered by anyone but myself. The work of feeding the young, however, generally reveals their presence to all members of the family.

The nest is usually made of small twigs, bits of bark, etc., and invariably lined with an abundance of horse hair. It is to me a mystery how these little Sparrows find so much of this material, particularly here at

Floral Park where horses are not very abundant but Chipping Sparrows are excessively so, and all seem to find an immense quantity of their favorite lining material. I have observed nests where the bulk of the lining was black horse hair but the inside white, showing that the bird deliberately selected the white hairs for the inside. In New England the Chipping Sparrow is generally known as the Hair-bird. The eggs are four or five in number, small, of a most exquisite shade of blue more or less spotted with black near or about the largest end. There is wide variation in the number and size of these spots, some examples being almost spotless.

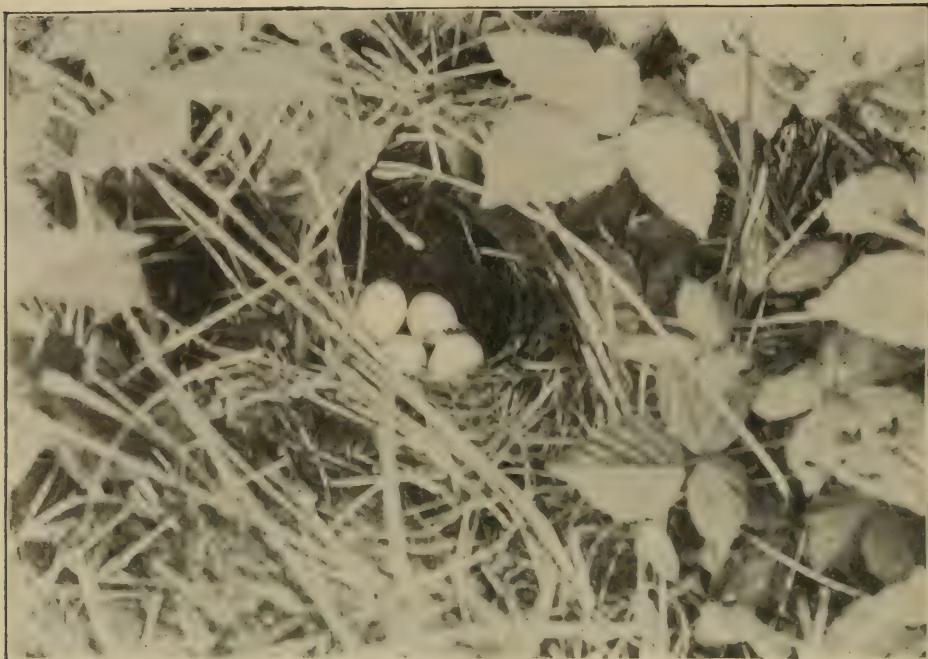


YOUNG CHIPPING SPARROW

The Grasshopper Sparrow

(*Coturniculus savannarum passerinus*)

THE Grasshopper Sparrow is an extremely rare bird within the city limits, or, in fact, anywhere near New York City. Previous to 1904 I had seen it only once at Floral Park during the breeding season. Last year a nest with two eggs was found in a field at Belmont Park near where the city line divides the Borough of Queens from Nassau County. I believe that two or three pairs were nesting in this locality, as the chirring song,



NEST AND EGGS OF GRASSHOPPER SPARROW

like the stridulation of a grasshopper, was frequently heard in different parts of the field. The parent bird was flushed from the nest when found and there is no mistaking its identity. Eggs white with numerous small brown spots.

The Song Sparrow

(*Melospiza cinerea melodia*)

ONE of the most delightful birds of North America is the Song Sparrow, occurring over the whole Continent in abundance and being found everywhere dwelling near human habitation. In the primeval forests of Northern Maine and Quebec I have invariably found one or more pairs of the Song Sparrow nesting where a little clearing had been made and a logger's cabin or sportsman's camp had been erected. It is found about all the suburbs of the city of New York, though not nearly so abundant as the Chipping Sparrow. Here at Floral Park, which is just outside the city limits, it is not abundant, owing I fear to the great number of English Sparrows which overrun the place, though a few pairs breed here every season. One or two pairs at least nest about my lawn,—not on the ground as is the custom of this species, but in dense shrubbery. For three years a

pair have raised their brood in a Crimson Rambler rose arbor ten feet from the ground.

These birds remain about the lawn all winter unless the weather is particularly severe, and I have often fed them when the ground was covered with snow. They are most persistent songsters and their song is a real gem in bird music and is not confined to the breeding season. I have heard their cheerful notes on my lawn every month in the year.

They begin nesting quite early and probably rear two broods each season. The nest is usually built upon the ground and carefully concealed. It is constructed almost entirely of dried grasses. The eggs are four or five in number, of a light chocolate color freely intermingled with some grayish tints, often of a greenish shade. Sometimes the gray predominates, sometimes it is chocolate, a series of eggs showing a wide variation in coloring.

I am afraid that a good many Song Sparrows are mistaken for English Sparrows and killed. It is not an easy matter for an inexperienced person to tell one species from the other where both are to be found, and promiscuous shooting in such cases is sure to result in the destruction of some *Melospizas*. The Song Sparrow is a very useful bird and a most delightful one to have



NEST AND EGGS OF SONG SPARROW

The Warbler

about our homes, and the greatest care should be taken to protect it. Its food consists partly of weed seed and partly of noxious insects.

The Field Sparrow

(*Spizella pusilla*)

A DELIGHTFUL bird is the Field Sparrow, about the size of the Chipping Sparrow, but within the city limits not nearly so abundant. It breeds regularly in the Borough of Queens and is found in vacant or waste land, partly wooded. The bird arrives early from the South and its cheerful song is one of the very first to be heard, often as early as the end of March. He is a persistent as well as a delightful songster, generally delivering his song from the topmost branches of some half grown tree or large shrub; also from telegraph wires. This bird has the longest season of song of any which breed within the city limits, excepting only the Song Sparrow. The singing season, which commences upon its arrival from the South, say April 1st, continues well into September.

The Field Sparrow builds its nest of dried grasses and rootlets and it is usually placed in a thick clump of bushes, wild rose and briar being favorites, a foot or more from the ground. I have found nests, however, built upon the ground under sheltering tufts of dried grass and also in small cedar trees as much as six feet up. The eggs are of a grayish color thickly spotted, and four is the usual number. In 1902, however, I examined some dozen nests on Long Island all of which had three eggs or three young birds; not a single one I found that year contained as many as four, while the next year all the nests in the same locality contained four eggs or four young birds,—not one that I saw had less. Like most other Sparrows this species is largely a seed eater though insects form a considerable portion of its diet.

Vesper Sparrow

(*Pooecetes gramineus*)

THIS bird is often mistaken for the Song Sparrow. Its song is similar, but easily distinguished when one becomes familiar with both. In size and coloration there is much similarity between the birds, but their habits are materially different. About New York the bird is much more abundant than the Song Sparrow and occurs in goodly numbers within the city limits. Among the fields of the Borough of Queens it is particularly abundant. Its food habits are similar to those of the Song Sparrow.

The Vesper Sparrow or Grass Finch is essentially a ground bird, living, feeding and nesting in pastures, fields and vacant lots. Its song is slightly less pleasing than that of the Song Sparrow, and may be heard late after-

noons, particularly at sunset and dusk. Its habit of singing freely at this time gives the bird its common name. The principal distinguishing marks are its two white outer tail feathers. When the bird is flushed these two white feathers show plainly, as is the case with the slate-colored Junco (*Junco hyemalis*).

The Vesper Sparrow builds its nest on the ground, and in location, construction, coloration and size of the eggs, which are four or five in number, closely resembles that of the Song Sparrow.



NEST AND EGGS OF VESPER SPARROW

Barn Swallow

(*Hirundo erythrogaster*)

THE Barn Swallow is one of our most beautiful and graceful birds with notes exceedingly soft and pleasing to the ear. It is not an abundant bird in or near New York City, owing, no doubt, to the great abundance of English Sparrows and to the scarcity of good breeding places of which an old barn is the best example.

A pair of Barn Swallows have raised two broods each season for three

years in the same nest which is located in the girders of an open wagon house on my farm, the nest being not more than nine feet from the ground, and the wagon which it shelters is used every day by the farm hands, and



NESTS OF BARN SWALLOWS

there is constant going and coming which the birds do not seem to mind in the least, nor do they mind the children of the place when playing in the wagon and within touching distance of the nest, but continue to incubate the eggs and feed the young birds regardless of the life and activity which is going on about them.

The nest of the Barn Swallow is constructed principally of mud and lined with soft, dry grasses and feathers. The eggs, which are beautifully spotted, are four or five in number. It is a pity that this delightful bird is disappearing from thickly-settled localities, yet it is but natural that they should retire to the scattered farm buildings where they can find good nesting sites and plenty of mowing fields and meadows over which to skim in quest of their insect food which is always taken on the wing.

The Catbird

(Galeoscoptes carolinensis)

THE Catbird is a most delightful species, and while more essentially a resident of meadows and woodlands, particularly along water-courses and the borders of lakes and ponds where a dense growth of brush may be found, he nevertheless comes freely to settled localities and nests in the vines or shrubbery about our dwellings and upon our lawns.

The bird is not uncommon in all the New York City suburbs, and I believe its habit of nesting near human habitation is one that he is rapidly acquiring. As a boy I never knew one to nest anywhere but in a wild place remote from dwellings and near water. At Floral Park several pairs nest annually on the lawn, though there is no natural water within three miles. They seem tame and unsuspicious and sing constantly at our very doors and windows. Their nests are always adroitly concealed in some dense clump or hedge of shrubbery and it takes a sharp eye and a careful search to locate one. They do not in the least molest our garden fruits but seem fond of mulberries which they devour with avidity.



NEST AND EGGS OF THE CATBIRD

With rare exceptions the eggs are four in number, a deep, greenish blue without spots. The nests are made of twigs and bark and lined with fine rootlets, some examples being very beautiful and models of ingenuity in

construction. I have in mind one in my collection which is constructed wholly of long, ribbon-like pieces of thin bark from grape vines ingeniously wound and woven together with the usual lining of small wiry rootlets.

As a songster the Catbird ranks high among North American birds. It is first cousin to the Mockingbird and almost as much of a mimic. The song is much like that of the Brown Thrasher but a trifle less clear and buoyant. All in all the Catbird is a delightful bird and one that should be encouraged to dwell near our homes, for in addition to his delightful song the Catbird destroys quantities of noxious insects.

The Spotted Sandpiper

(Actitis macularia)

WHILE the Spotted Sandpiper is known as a bird of ponds and streams it frequently seeks dry uplands far removed from any stream or body of water to breed. For years one, two, or three pairs have come to Floral Park, located their nests, deposited their eggs, and hatched their young under the shelter of some large clumps of herbaceous peonies in a cultivated field some distance from any building. In the Borough of Queens and other places on Long Island they are occasionally found breeding in hay fields or near hedges and fences, and sometimes in vacant lots and pastures.

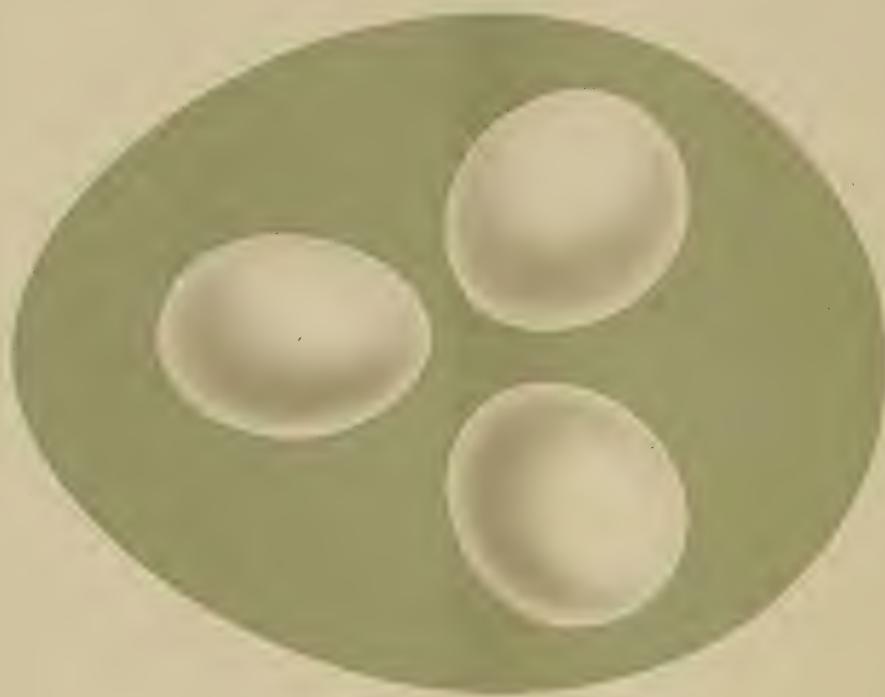
The nest, if such it may be called, is a decidedly flimsy affair, consisting only of a small quantity of dried grasses as a lining to a slight depression in the ground which serves the purpose of a nest. The eggs, four in number, are light creamy-buff, heavily and irregularly spotted with black. The note of the Spotted Sandpiper is pleasing, and its flight most graceful.

(To be Continued)

THE WARBLER

SECOND SERIES

VOL. I. NO 7



CONURUS CAROLINENSIS
(CAROLINA PAROQUET)



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JOHN LEWIS CHILDS, EDITOR

Plate VII. Eggs of the Carolina Paroquet

(Conurus carolinensis)

THE eggs of the Carolina Paroquet are known only from a few specimens laid by birds in confinement which were in the possession of Robert Ridgway, of Washington, D. C. Three of these eggs are in our cabinet and were laid on the following dates: one on July 5th and one on July 12th, 1901. Concerning these two eggs Mr. Ridgway writes under date of November 19th, 1901: "Having learned that you are forming a first-class collection of birds' eggs, I write to offer you two eggs of the Carolina Paroquet. Eggs of this bird are so extremely rare that to the best of my knowledge not a single private collection in the world contains one, nor, indeed, any public museum except the United States National Museum, and all of these possessed by the latter were laid by birds belonging to me. The eggs are not absolutely perfect, having been slightly dented on one side, the one on which the hole for blowing is drilled, but this slight defect does not in the least detract from their appearance when viewed from the opposite side, nor from their value as specimens. The eggs were laid July 5th and 12th respectively by the female of a pair which I captured alive in March, 1896, near Lake Okechobee, Florida. This species is now very nearly extinct and will undoubtedly become completely so within ten years."

The third egg in our cabinet was laid on July 29th, 1902, concerning which Mr. Ridgway writes under date of August 7th of the same year: "On July 29th my female laid her first egg of the season, which I took. Two days later she laid another which I started to take, but both birds protested so energetically that I allowed it to remain in the nail keg. In fact, they told me very plainly, both by actions and words, that they had use for it. They now have at least two more eggs. There were two when I last

put my hand inside of the keg, but I do not want to disturb them any more, as they both spend most of their time on the nest. So I shall let them have their way and await the outcome of their efforts to raise a family with intense interest."

Under date of November 13, 1902, Mr. Ridgway again writes: "My female Paroquet laid only six eggs the past summer and I shall never get any more, as the bird is now dead. The first she laid is the one I sent you. The remaining five were hatched, but I have only two young ones left, a rat having carried off one, another was starved by the parents when half grown, and the third I gave to a friend who had time and disposition to take care of it in order to save it from starving."

The three eggs are shown on our plate, and measure respectively 1.42 x 1.06—1.30 x 1.19—1.30 x 1.17. Color pure white with an ivory gloss surpassing that of the Ivory-billed Woodpecker.

Birds Breeding Within the Limits of the City of New York

(Concluded)

By John Lewis Childs

NOTE—In concluding this series of notes on the "Birds Breeding Within the Limits of the City of New York," I wish to say that I have confined my remarks wholly to species that have come under my personal observation. I am aware that there are a few more species that breed to a more or less extent within the city limits and of these I hope to have something to say at some future time. Strange as it may seem, I have never observed the Bluebird (*Sialia sialis*) breeding within the city limits, or even in Nassau County. Yet it undoubtedly does breed here to some extent. There are also records of the Redbird (*Cardinalis cardinalis*) breeding in Central Park. It is more than likely that the Woodcock, Clapper Rail, Sharp-tailed and Seaside Sparrows, Chickadee and Tufted Titmouse breed within the city limits, and probably half a dozen more species not referred to.

European Goldfinch

(*Carduelis carduelis*)

THE beautiful European Goldfinch has been introduced in Central Park, New York, by importation made some years ago. While the bird has not increased rapidly it has, nevertheless, made a steady gain and is now well established in all the upper districts of the City. I have not been so fortunate as to see one on Long Island as yet, but a portion of a wing left by a neighbor's cat that had just devoured a bird indicates that this species has visited us once, at least, and met an untimely end.

Red-Winged Blackbird

(*Agelaius phoeniceus*)

TO my mind there is no more beautiful bird in and about New York City than the Red-winged Blackbird. A bird of striking beauty in plumage, with notes that are equally pleasing, he is at once an ornament to the landscape and a part of wild nature that would be sadly missed. As he inhabits fresh water marshes, meadows and favorable sections along water courses, the situations that suit his taste are not abundant within the City limits. There are, however, some swamps in the 2nd Ward of the Borough of Queens where the right conditions prevail, and as these swamps have a considerable area a few pairs of Red-wings find nesting sites sufficiently remote from

The Warbler

human habitation to meet their views and here they breed. It is probable that the bird breeds also on Staten Island but as to this I have no personal knowledge.

The nest of the Red-wing is made entirely of dried grasses, ingeniously woven together and attached to the branches of an alder or other low growing shrub or to rushes or masses of tall wild meadow grass. It is unusual for a nest to be placed as high up as six feet and frequently it is built almost upon the ground, the center of a tuft of wild, rank, tall growing grass being a favorable location. The eggs, three to five in number, are of an ash-gray color, freely marked with black. The bird usually builds in colonies and where conditions are favorable a great many pairs nest within a small area. I know of a spot of marsh near Smithtown, L. I., not much if any over an acre in extent where twenty to thirty pairs breed every season. Many of the nests are only a few feet apart.

The Red-wing stays with us until very late in the fall and returns quite early in the spring. Rarely one or more may be seen at any time during winter. I have in my collection two females and a male taken in the Adirondacks (Warrensburg) some years ago late in December when the ground was covered with deep snow. A flock of a score or more were seen at the time.

The Flicker

(*Colaptes auratus*)

THE Flicker rejoices in no less than ninety-nine vernacular names, of which High-holder, Clape, Yellow-Hammer, Cotton-Rump, Golden-winged Woodpecker, Fiddler and Hackwell are the most common. He is a bird that is very common in all parts of the country, nesting freely in orchards near farm-houses, as well as in forests, yet he is one of the very rarest of the birds that breed within the limits of the City of New York. The Flicker is commonly seen during spring and fall migrations, but retires to more rural localities to breed. The life and bustle of our city suburbs is probably the cause of this, for while not objecting to nesting near a quiet farmhouse, the bird appears to have an aversion to noise and activity as met with near any large city. On the eastern end of Long Island he is a common bird, yet not so abundant there as he is on the mainland across the Sound in Connecticut or throughout New England.

The nest is located in a dead or decaying tree; often one that appears to be alive and thrifty, yet with a dead heart. The excavation is a large and commodious one, always much wider inside than the round entrance hole, and twelve to thirty inches deep. The pure white eggs, six to ten in number, are laid on fine chips that accumulate during the process of excavation. No other nesting material whatever is used. Though a



NEST AND EGGS OF THE FLICKER.

member of the Woodpecker family, the Flicker seldom seeks its food in the bark and crevices of trees but feeds mainly upon the ground, taking all manner of insects, of which grasshoppers are decided favorites. In September the birds congregate in flocks to a considerable extent and may be seen feeding in old pastures or hay-fields in large numbers. At this time, though naturally a very lean bird, they become somewhat fat, and in many places people consider them good eating, though to my knowledge they have never been hunted as an article of food.

The Flicker arrives very early in the spring and stays to the very verge of winter. I have even known them to spend the winter, apparently, on Long Island, as I have seen them in February in Suffolk County about swampy places that abound in warm springs. The note of the Flicker has a decidedly wild charm that to me was always fascinating.

The Warbler

Chimney Swift

(*Chetura pelagica*)

THE common Chimney Swift is an abundant bird in the suburbs of New York City and is a familiar object to everyone and its notes are familiar sounds. They breed in deserted or unused chimneys, the nest being constructed of small sticks glued together by an excretion from the mouth of the bird. The sticks are collected by seizing a twig on a dead limb and breaking it off while the bird is on the wing. They never descend to the earth to pick one up. The eggs are four or five in number and pure white.

The Chimney Swift is an abundant bird over all of eastern North America, being particularly common about the villages of New England, and hardly a home, be it either a farmhouse or village cottage, but has one or more nests of this bird in each unused chimney.

Yellow-Billed Cuckoo

(*Coccyzus americanus*)

THE Yellow-billed Cuckoo, or Rain Crow, as he is locally known about New York, is frequently seen and heard; more often during July and August than during any other time, yet the bird rarely nests within the City limits. A nest found in the woods back of Creedmoor in 1904 is the only instance of this species nesting within the City limits that has come to my attention. This Cuckoo makes but little effort in nest building, usually choosing some old nest of the Jay or Catbird, often one that has but little left except the foundation sticks. It is possible that a little fresh lining is added, but the whole affair is very meager. Often there is little to prevent the eggs from rolling out of the nest. These are three or four in number, considerably larger than a Robin's egg, and a lighter shade of blue which color easily fades. The eggs appear to be laid three or four days apart, yet the bird begins to incubate as soon as the first one is deposited in the nest.

The Cuckoo is supposed to eat the eggs of smaller birds, but there seems to be but little really satisfactory evidence to support this charge. It is well known, however, that the bird destroys an immense number of caterpillars and grubs. It is one of the very few birds that will eat the tent caterpillar, and I am inclined to believe that the Yellow-billed Cuckoo does much more good than harm.

Purple Grackle

(*Quiscalus quiscula*)

THE purple Grackle may be found nesting in almost any suburb of the City of New York where large spruce or pine trees are found. A good many old mansions are surrounded by tall spruces, planted years ago

for ornament, shade or wind-breaks, and in these trees the Grackle loves to build its nest. The nest is a rather bulky affair, well made and substantial, and the dark-colored eggs are four to six in number. The note of the Purple Grackle, which is frequently heard about their favorite nesting trees at breeding time, is rather coarse and harsh, yet to me it has a wild sort of charm that I delight to hear, and I often wish there were suitable trees on my lawn for them to build in, as I should be glad to have a colony near me.

The Yellow Warbler

(*Dendroica aestiva*)

OF ALL the delightful little birds that nest and sing about the homes of the suburban residents of Greater New York, none is more delightful or more beloved than this beautiful Warbler, a superb mite of golden sunlight that flits about the green foliage of trees and shrubbery uttering its delightful high-pitched notes from morning until night, and next to the Hummingbird he builds the most beautiful and fairy-like nest of all birds found in the New England and Middle States. This truly golden bird comes each spring with the golden blooms of the Narcissus and his presence is announced by his golden notes heard early some morning as the balmy zephyrs waft them in through the windows of our sleeping rooms. On these happy occasions I always regret that I cannot in some way make the birds understand how glad I am to welcome them back.

The Yellow Warbler is a common bird in and about villages and suburban homes where there is a quantity of trees and shrubbery. Through the entire spring, summer and until fall is well advanced the yards, orchards and "waste places" are "made gay" by his presence. It is the "wild Canary" or "Yellow-bird" of the country side and this name is stretched to an extent sufficient to include some others Warblers and the American Goldfinch.

The bird arrives early in May, and during the earlier weeks of its stay it is omnipresent:—at once the most familiar and abundant of its group. So common is it at times that I have counted eighteen individuals feeding in a small orchard. Here its food consists very largely of larvae of the apple codling moth and other fruit destroying worms. While a few remain to breed in the orchards, shade trees and shrubbery about the towns, by far the greater number withdraw to the seclusion of thicket swamps, where they breed commonly in the elder bushes, swamp rose, blackberry, alders and willows abounding in such places.

The nest is a marvel of architecture. It is more often built of time-silvered, hoary plant fibres than other material; this is lined with down gathered from the growing fern fronds, the cat-tails or other pappus producing

plants. While this description may cover the majority of cases, it is impossible that it should cover all. There are too many exceptions. No two nests appear to be exactly alike, all in point of fact differing each from the other.

One nest which I have in my collection is made, except for the lining, entirely of "waste"—that used for cleaning steam engines. This was built so close to a trolley track that the tree was brushed by each passing car. Another oddity is composed almost entirely of the pappus of the cat-tail. A third was constructed of wool, gathered from a barbed wire fence surrounding a sheep pasture, against which the sheep were constantly rubbing. But no matter what the material is, the nest is strong and enduring. Sometimes several years pass before a nest is finally destroyed.

The Yellow Warbler is one of those poor unfortunates upon whom the Cow-bird (*Molothrus ater*) thrusts its unwelcome egg. Being unable to eject this the bird sometimes resorts to strategy, building a second nest immediately upon the first, by this means ridding itself of the offending egg.

Once while walking on a railroad track, flanked on either side by a water-filled ditch, I counted not less than ten nests of this species in less than a mile.

While, generally speaking, the Yellow Warbler breeds close to the ground—the greater number of nests being not over ten feet from it—I have occasionally seen them at a height of, approximately, twenty feet. The eggs number, ordinarily, either four or five. I have never heard of a larger number and frequently no more than three are laid. The variation shown in a long series of these eggs is not nearly so great as might be expected. It is much less than that shown by any Warbler unless it be the Hooded (*Wilsonia mitrata*). The color is a delicate blue-white, varying in intensity in different specimens. The markings are very dark, purplish brown, becoming in some specimens yellow brown. These vary greatly. They are always more thickly gathered at the larger end, but distinct wreaths are not frequent.

I know of an egg that is unique. To all intents and purposes it is unspotted, with its surface coarse and rough, but when held to the light the spots are readily seen, apparently on the inside of the shell. The egg appears to have been laid wrong side out. I have never seen another egg anything like this. The other eggs in this clutch are normal.

The Baltimore Oriole

(*Icterus galbula*)

THE Baltimore Oriole is one of the most beautiful birds that inhabit North America. The brilliant orange of the male is one of the richest and brightest colors to be found on any bird outside of the tropics.

The Oriole delights to suspend its ingenious nest in the drooping branches of a large elm tree, though apple, pear, maple and black walnut are used. A weeping willow also affords a fine site. The Oriole is in every way a most conspicuous and noisy bird and his presence cannot be overlooked. He has a variety of notes, all of which are musical, but the song proper is not often heard. It is a wild, rollicking series of notes rapidly given and strikes me as being an outburst of long-suppressed emotion which is absolutely uncontrollable. No other bird song conveys to me so much evidence of spontaneous, soul-felt joy.

The nest of the Baltimore Oriole is a deep, pocket-like affair, made of soft fiber, pieces of string, horsehair, etc., ingeniously woven together. On account of its nest the bird is known in many places as the Hang-Bird. The eggs, usually five in number, are of an ashy-gray color, curiously and irregularly striped and banded with fine black lines. Among oologists the eggs are considered to be exceedingly handsome. The Oriole breeds freely in all the suburbs of New York City, and throughout Long Island. It is more common in the Hudson River valley than any other place I know of. At West Park, the home of John Burroughs, scores of nests may be counted in the large elms that shade the streets.

American Goldfinch

(*Astragalinus tristis*)

THE sprightly little Goldfinch, known as Thistle-bird and Wild Canary, is by no means a rare breeder in the city limits of New York, but the bird has a habit of nesting very late when the foliage of trees is exceedingly dense, and thus escapes observation to a greater extent than most any other bird. The Goldfinches come very early in the spring and linger to the verge of winter. I have seen them in December and again in February, and during mild winters some may remain all the year. The plumage is inconspicuous during fall and winter, both sexes looking very much alike, but in early spring the male begins to develop his bright yellow body color, with black wings and tail, which renders him an exceedingly conspicuous and beautiful bird.

All the notes of the Goldfinch are Canary-like, the song very much so, and if anything more thrilling and beautiful than any caged bird. His song, however, is not often heard, as the bird sings very little. I do not hear the song over five or six times a year, though during the spring months I am constantly on the alert for it, for without exception it is one of the most cheery strains of bird music to be heard in eastern North America.

The food of the Goldfinch consists almost wholly of seed of compositæs. The thistle is a favorite, and in any old field or pasture where this plant abounds the Goldfinch may always be found. The birds also come to

our lawn to gather seed of the dandelion and to the garden, greedily devouring seed of the sunflower, zinnia and cosmos. The sunflower is a special favorite and they will take it in preference to anything else. In California where large quantities of lettuce is grown for seed the Goldfinches do a great deal of damage and are often slaughtered without mercy. If the planters would only put out a small quantity of sunflowers (the small-flowered variety like *Cucumerifolius* suits them best) their crops of lettuce seed would be amply protected. During late fall and winter, as well as in early spring, the Goldfinch feeds upon the seed of mullein (*Verbascum thapsus*).

The nest is a pretty and well-made affair, in this respect almost rivaling that of the Yellow Warbler. It is usually placed well up in some large deciduous tree, the maple being a favorite. The tiny speckled eggs are usually five in number.

The Meadowlark

(*Sturnella magna*)

IN years past the Meadowlark has been rather a common bird in many places within the present limits of the city of New York, but they have steadily retreated as improvements have advanced and it is now a difficult



EGGS AND NEST OF THE MEADOWLARK

matter to find a pair breeding in any of the Boroughs, though I believe a few are left. On the Hempstead plains in Nassau County, and only a short distance over the city line, a good many pairs breed every season. In the vicinity of New York the Meadowlark is an all-the-year resident, and during cold, snowy spells in winter he sometimes comes almost to our door in quest of food.

This bird ought to increase in number now that they are no longer regarded as a game bird, which was the case a few years ago and a great many were killed by gunners, especially near large cities where game is scarce. It was only fifteen or twenty years ago that gunners came to Long Island in September and October by the score and slaughtered Robins, as well as Meadowlarks, by the bagful. We are all thankful that the day of such killing is passed, never to return.

Meadow Larks build their nests upon the ground and conceal them well. A full set of eggs ranges from four to six. They are of good size, white, spotted brown, and some examples are remarkably handsome. The note, or song of the Meadowlark, if it may be so called, is soft and pleasing.

Bob-White

(*Colinus virginianus*)

IT WILL probably be a difficult task for anyone to find a breeding pair of Bob-Whites anywhere within the limits of Greater New York now, at least as far as the Long Island portion of the City's territory is concerned. Yet they were here two years ago, one brood certainly—and a good big one, too—on the present site of Belmont Park race track. They have all disappeared from that locality, however, though I do not think that many of them were shot. The last Quail I ever saw in the city limits was brought to me two years ago late in December by some boys who had found it with a crippled wing and unable to fly. I placed the bird in a commodious cage and gave it food which he took readily, but he beat himself against the bars of the cage so much that after a few days I liberated him in a large conservatory that was densely filled with growing plants. Here he wintered very nicely. His wing healed so that when we gave him liberty in April he was able to take a long flight and headed straight for his old haunts. Twenty years ago the pleasing call of Bob-White was commonly heard at Creedmoor and many places in the old town of Flushing, but it has long ago disappeared from these places.

The Quail is a prolific bird, raising usually two broods in a season, each brood numbering from ten to twenty. The nest is placed upon the ground, carefully concealed, and when the eggs hatch the male bird usually takes charge of the brood while the female proceeds to lay and incubate another

set. The birds keep together with the parents until the mating season the following spring when they break up, the males wandering off in quest of mates.

A good many Southern Quail are annually brought to Long Island by the various sporting clubs and liberated during February or March for breeding. I believe however that very few if any of these birds breed the first season. On the grounds of the Wyandanch Club where many Southern birds were liberated last March, few birds have bred and flocks of old ones have collected together and kept together all summer.

There are few more beautiful sounds in wild nature than the call of the Quail and their presence adds a charm to the landscape which nothing else can give, and it is a pity that they must be hunted and shot when their lives are so desirable and useful to agriculture.

Birds Observed at the Rangeley Lakes, Maine

(June 9th to 15th, 1905)

ON THE evening of June 9th Mr. F. B. Spoupling and myself reached Bemis on Lake Mooselookmeguntic, one of the Rangeley Lakes, in Franklin County, Maine. From here we went by steamer to Upper Dam, where we stayed a couple of days. Then across Lake Richardson through Upper Richardson to Middle Dam, where a short stay was made. Then by team over the five mile carry to Lake Umbagog where we took steamer and sailed the entire length of this beautiful body of water, some ten miles, to the New Hampshire side at Lake View. Here we also spent a day, and came out by way of Erroll, some eight miles distance up the Lake.

The following is a record of the birds observed from the time reaching Bemis until we left Errol:

Bald Eagle. Several were observed on Richardson and Umbagog Lakes; said to nest in woods near by.

Osprey. Three or four specimens observed.

Broad-Winged Hawk. Heard one, and one was seen. No other species of Hawk was observed.

Loon. Several seen on Umbagog and Richardson Lakes.

American Merganser. Observed at Upper Dam, where they were probably nesting.

Great Blue Heron. Observed several times on the various lakes. They are said to nest in the vicinity.

Spotted Sandpiper. Abundant all about the lakes.

Herring Gull. Observed on all lakes. Half a dozen individuals were seen at one time.

American Crow. Very few observed. Evidently quite a rare summer bird in this locality.

American Robin. Very abundant, not only about the camps, but in the woods. Many nests observed, some containing eggs, others young in various stages. Full-fledged young on the wing noticed in two or three instances. Robins appear to be nesting more successfully here than in any place I ever observed them. The reason for this may be partly owing to the lack of crows, which are their greatest enemy at nesting time.

The Warbler

Barn Swallow. A few seen; nesting where favorable conditions were found.

Tree Swallow. Abundant on the lakes. Nest ready for eggs observed.

Cliff Swallow. Very abundant, and nesting.

Bank Swallow. Seen only at Erroll.

Chimney Swift. Abundant. Were observed last year nesting in hollow trees on the shores of Lake Moosehookmeguntic.

English Sparrow. Abundant at Bemis.

Rusty Blackbird. One specimen seen at Bemis.

Ruffed Grouse. Several observed.

Northern Water-Thrush. Abundant, especially at Upper Dam.

Bluebird. Very few observed.

Bronzed Grackle. Nesting abundantly at Upper Dam.

Blue Jay. Very rare. Heard only a few times, and not seen.

Waxwing. Very abundant everywhere. Not nesting.

Bobolink. Only a few seen or heard.

Winter Wren. Heard every day in various places, their enchanting song being a constant delight.

Red-Winged Blackbird. Observed only at one place on Lake Umbagog.

Purple Martin. Seen and heard several times.

American Crossbill. Frequently heard.

Ruby-Throated Hummingbird. One only seen, at Middle Dam.

Scarlet Tanager. Heard three or four times.

Catbird. Very rare.

Woodcock. One seen at Lakeside.

Kingbird. Rare.

Gold Crowned Kinglet. Abundant.

Olive-Sided Flycatcher. Quite abundant. Nests completed, but without eggs.

Downy Woodpecker. Rare.

Hairy Woodpecker. Rather rare.

Least Flycatcher. Rare.

Phoebe. Rather rare. Only a few seen or heard.

Alder Flycatcher. Frequently heard, and one nest with one egg found.

Yellow-Bellied Sapsucker. Observed several times at different points.

Flicker. Rare.

Pileated Woodpecker. Notes often heard, and their work on trees often seen.

Black Poll Warbler. Note heard three or four times.

Nashville Warbler. Very abundant.

Parula Warbler. Abundant.

Canadian Warbler. Rare; heard only a few times.

Redstart. Fairly abundant.

Maryland Yellow-Throat. Fairly abundant.

Chestnut-Sided Warbler. Rather rare.

Mourning Warbler. Noted heard indicated that this bird was abundant at Upper Dam.

Black and White Warbler. Heard a few times.

Blackburnian Warbler. Heard and seen only a few times.

Black-Throated Blue Warbler. Abundant at Middle Dam.

Oven-Bird. Only a few heard, and one nest with four eggs found.

Magnolia Warbler. Rare.

Myrtle Warbler. Heard at several places.

Purple Finch. Very abundant, and singing delightfully at all times and all places.

Goldfinch. Fairly abundant.

Indigo Bunting. Heard only at Errol.

Pine Siskin. Very abundant everywhere.

Red-Breasted Nuthatch. Observed only a few times.

Kingfisher. Abundant, and nesting in every available bank.

Hermit Thrush. Abundant at nearly every point.

Olive-Backed Thrush. Very abundant and singing at all times. Completed nest, without eggs, observed.

Wilson's Thrush. Rare.

White-Crowned Sparrow. One male seen at Upper Dam.

Slate-Colored Junco. Very abundant everywhere.

Savanna Sparrow. Notes heard at Upper and Middle Dam, and on Lake Umbagog.

White-Throated Sparrow. Very abundant. Several nests observed.

Song Sparrow. Abundant, and nesting.

Philadelphia Vireo. Three seen at one time at Upper Dam.

Red-Eyed Vireo. Very abundant.

Solitary Vireo. One, only, seen and heard. Probably nesting.

Chipping Sparrow. Rather rare.

Chickadee. Only a few observed.

Vesper Sparrow. Heard only at Errol.

Prairie Horned Lark. Twice seen at Errol.

A Hummingbird Incident

The following article appeared in the *Brooklyn Times* August 5th:

RUBY-THROATED HUMMINGBIRD

 How Her Little Ones Were Looked After Until
 Mother Returned

EAST MORICHES, L. I. Aug. 5.—The Misses Clara and Mary N. Howell, sisters of Postmaster E. O. Howell, of this village, were much pleased to find that a Ruby-throated Hummingbird had its nest near their door, and watched it carefully. After the severe electrical storms of last week, the mother bird was missing, and it was supposed had deserted the nest, or had met with disaster. The Misses Howell had the nest taken from the tree, by sawing off a limb both sides of the nest. The young birds were fed, from the point of a toothpick, with canned honey and appeared to thrive under the care of their foster mothers for two days when the old bird reappeared around the doorway. The limb containing the nest was replaced in the tree and securely tied. The old bird resumed its care of the young ones, and they are now completely fledged, in beautiful plumage, and apparently ready to strike out for themselves and see the world.

To verify the above statement we wrote to the Misses Howell and received the following reply, dated August 10th:

“Dear Sir:—

“ Your letter asking about the Hummingbirds was received. The newspaper story was not far out of the way. The bird built its nest very near our windows and I was much interested in it and watched it whenever I had leisure. One day I did not see the old bird at all and as night drew near I was fearful she had become the victim of a cat or some accident, and I thought we might be able to save the young birds. So a part of the limb where the nest was attached was broken off, and the birds were fed with honey from the point of a pin, then covered with cotton batting and placed in a comfortable room. The next morning when I looked toward the nest what was my surprise to see the mother bird flying around the tree. I immediately had the limb replaced, firmly tied, and soon she was with the nestlings as happy as ever. We continued to watch them with interest until the morning they flew away, and we regret we shall see them no more.

“(Signed)

Mary N. Howell.”

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NUCIFRAGA COLUMBIANUS
(CLARK'S CROW)

PLATE VIII. Egg of Clarke's Nutcracker

(*Nucifraga columbianus*)

THE egg of Clarke's Crow shown on our Colored Plate was taken with the nest on March 23rd, 1900. Locality, Wasatch Mountains above Alpine, Utah County, Utah. Altitude about 6,500 feet. Collected for H. C. Johnson. Female taken by hand from the nest. The data reads as follows: "Nest placed in a pronged fork of limb (growing upward) of a black balsam tree 50 feet high. Three feet from the body of the tree, 16 feet from ground on a side hill with southern exposure. One thousand feet from another nest of the same species. When collector climbed near the nest the bird would not fly. On putting his hand near her she made a slight hissing sound and opened her bill. She was sent alive to me. Nest taken could not have been procured in an ordinary winter. The present winter is free from snow, except at great altitudes. Snow line begins a few yards up from this nest."

We also have in our cabinet a set of four eggs taken by the same collector on the same day and in the same locality. Incubation known to be five or six days, yet eggs appeared fresh. Concerning nest data reads: "Nest placed on a horizontal limb six inches in diameter in a black balsam tree, 70 feet high and 30 inches through at the base. Many small limbs were growing about the nest which protected it from dislodgment by winds. Tree on a side hill just below present snow line; hill facing south. Collector tried to get bird, but she invariably flew as he climbed out on the limb near nest, but as he descended would fly back to the nest. After several attempts to capture bird the eggs were secured with the nest. The bird on leaving would disappear completely and on returning would come straight as a bullet and fly directly to and into the nest."

The color of the egg is accurately represented on our plate, and is the same as all other specimens of this species we have seen; the size is also exact, $1.32 \times .95$. Nest composed of small sticks with a lining of bark fiber.

Nesting of Ward's Heron

(*Ardea herodias wardi*)

By R. D. Hoyt

IN its breeding habits Ward's Heron is very erratic and, with the exception of the Bald Eagle, is one of our earliest, or perhaps more properly speaking, the latest of our birds to begin nesting. It does not wait for the new year but a few individuals begin operations by the latter part of November and by Christmas time a few nests may be found with young. New nests are now more numerous, and by the middle of January many nests will contain fresh sets of eggs. Still the nest building goes on, but in diminishing numbers, until the latter part of February. I once took a set of two fresh eggs on April 4th. This may have been a second set, but I am not aware that more than one brood is reared in a season.

Here in Hillsborough County, Florida, the site selected for the colony is almost invariably a floating island in the centre of a marshy spot. The growth on the island is usually bay elder and wax myrtle,—low bushy trees all tangled up with bamboo briar. Some islands contain buttonwood only, and some have only willows. These islands are all small, from 20 to 100 feet in diameter, and the size of the colony is determined by the space it has; from half a dozen to thirty pairs occupy the ground. The nests in some instances are huge structures, having been renewed from year to year, presumably by the same pair of birds. They are placed in any situation that forms a good foundation,—the entire top of a stout bush, or the horizontal limb of a tree if sufficiently strong, and some are within two feet of the ground, others eight to twelve feet.

One nesting place visited last season was a buttonwood island. During its years of occupancy the birds had broken off every limb and twig that could be used for nest building until now nothing but stubs remain. This island contained eleven nests, all of which were made of cypress sticks that had been brought at least three miles, that being the nearest cypress. Nests are usually from 30 to 40 inches in diameter, and 10 to 14 inches deep, of

large sticks as a base, smaller ones toward the top, and a few twigs with green leaves, and some grass as a lining.

The first colony visited the past season was on Feb. 4th. This contained eight nests, mostly in course of construction, only one set of eggs being taken. The second colony, one mile from this, contained twelve nests; five of these had full sets of eggs, six others had young birds varying in age from newly hatched to two nests in which the birds were nearly full grown—able to leave the nest and walk off at my approach. One nest was in course of construction.

The third and largest colony I visited on Feb. 10th, six days later. In this were some thirty nests, only four of which contained eggs, all the others having hatched. The young here were of all ages, about a fourth being nearly grown.

The number of eggs laid is usually three, about 8 per cent. of the nests containing either four eggs or young; and after the young are one-third grown they are usually reduced to two, as that seems to be about all there is room for at this stage, and the weaker ones are crowded out. I have seen many a dead young one suspended by the neck, the head being held between sticks of the nest.

The only theory that I can advance for the unseasonable time for this Heron's nesting is that they wish to escape annoyance from the multitude of Little Blue and Louisiana Herons that occupy the same nesting sites along about the first of April.

Long Island Bird Notes

By John Lewis Childs

ON April 20th of this year I took at Smithtown a male Yellow Palm Warbler in splendid plumage. This is the first time I have observed this bird on Long Island.

Several Purple Finches were observed this spring during migrations, which fact I note as I had not previously seen this bird in any part of the island.

A Ruby-crowned Kinglet was heard in full song on April 20th and another on the 25th. This was a genuine delight, as it was the first time I had seen this bird here or heard its song. While I was aware that the song was delightful I was more than surprised at the beauty of the notes, which charmed me beyond expression.

At Wading River on May 6th I heard the delightful song of the Carolina Wren and spent sometime in listening to its melody and observing the songster, which was in no respect shy but sang insistently for a long time and in full view of myself and a friend. This is the first time I have seen or heard the Carolina Wren on Long Island, and I am glad to say it was not the last.

At daybreak one morning early in September I was awakened by the note of a strange bird in the trees near my residence at Floral Park. At first I tried to connect the song with a Catbird or Brown Thrasher making a late farewell effort, but it would not go. I finally concluded it was nothing more or less than the Carolina Wren, though the notes were somewhat at variance with the song of this bird I had heard in the spring. To satisfy my curiosity I got up and went out and identified the singer. He lingered with us for three days during which time there was not many hours between morning and night that his beautiful song was not heard. He certainly delighted the whole family and his visit was highly appreciated.

A nest with a full set of two eggs of Mourning Dove was found at Smithtown on April 20th (see WARBLER No. 3, page 76), and another on May 23rd. Both sets were about to hatch.

Wilson's Thrush was heard singing in the trees on my lawn at Floral Park on May 19th and 24th during migrations. I had not previously seen or heard this bird on Long Island.

A flock of at least 300 Waxwings was seen at Floral Park one day in September feeding on the fruit of the wild cherry.

More Bluebirds have been seen at Floral Park this autumn than for any season in many years.

The following is a list of the birds observed at Wading River on May 6th while taking a morning drive of a few hours:

Robin	English Sparrow
Chipping Sparrow	Song Sparrow
Whippoorillw	Field Sparrow
Goldfinch	House Wren
Parula Warbler	Carolina Wren
Black and White Warbler	Ovenbird
Towhee	Blue Jay
Catbird	Great Crested Flycatcher
Kingbird	Crow
Purple Grackle	Red-tailed Hawk
Brown Thrasher	Chickadee
Phoebe	Bluebird
	Downy Woodpecker

* * *

English Sparrows Decreasing

THERE are fewer English Sparrows at Floral Park this summer than at any time during the last fifteen years. The difference is so marked that nearly everyone notices it and speaks of it. It also appears that this bird has nested very little during the past season. We would like to know if the readers of THE WARBLER have noticed any change in the number of Sparrows in their section.

The Long-Tailed Chickadee

By P. B. Peabody

BOHEMIANS in winter, eremites during the breeding time: such are the Chickadees. No birds are better known for the stark, dreary days when snow hides the wastes; while very few are more perfectly strangers to the mass of non-critical bird-lovers during the period wherein every Chickadee rake and hoiden is transformed into a tender parent: solicitous, now, and wary, and very strangely still.

The western race of the Black-cap, sturdier, every way, than its eastern and southern fellows, is yet quite their counterpart in matters of general habit. There is the same cheery, care-free winter roaming, in little "families" of from six to fifteen; there is the identical charming impudence during the hours of play and of food pursuit; and no *differentia* are apparent in the character of notes and in the periods or conditions of their utterance. The nesting habit, however, is quite another matter.

Like the Black-cap, the Long-tail would seem to have his times of decided winter wandering. In Northern Minnesota, for example, we have quite commonly in winter a fair abundance of what Mr. Brewster guardedly wrote-down, once, in a letter to the writer hereof, as,—"what is commonly known as *septentrionalis*." Yet in summer, throughout the same region, I never found, though spending many days among their familiar winter haunts, more than a single pair of chickadees. In Wyoming, too, we have the typical race, herein exploited, occurring very commonly in winter; while the relative summer abundance *seems*, at least, to be considerably less. These conditions are all the more marked since, as a rule, areas of winter habitance and of summer residence are fairly identical.

Food considerations, however, modify this observed fact. While, in Wyoming, the chief pastures, winter and summer, are in the sapling bull pines, the Chickadees naturally gravitate in summer into the insect-swarming precincts of the willowy, aspen-studded canyons. Conversely, we are not nearly so apt to find the Long-tailed Chickadee during the breeding time in the vicinity of Wyoming homes as we are when food is scarcer and more snugly hidden from even a clever and a keen-eyed searching.

Relatively weak of beak, though sturdy enough of physique, the Black-capped Chickadee, as a genus, would seem to favor greatly the rottenest of

"stubs" for its nesting. But it is clearly one of the commonest of bird paradoxes that the most robust of the Black-caps should choose, as a rule, the most rotten of sites for the digging, therein, of his nursery. This preference would seem so marked as to *appear*, at least, a matter of common and deliberate choice. And this choice is the more striking since, in the main, it takes the Chickadee fairly well out of his feeding ground at times: (a grave condition, when the family numbers, six,—seven,—*eight!*)

During autumn, winter and early-spring days, the Long-tailed Chickadee is found very commonly along the canyons, where willow, cotton-wood



HOME OF THE LONG-TAILED CHICKADEE

and box-elder stubs and stumps are very common. Herein one who searches with acquired skill may find in plenty the shallow excavations which serve to fend the sharper blasts and the fiercer wets of fall and winter days. But with the coming of May the main body of the scattered troops of Chickadees become measurably strangers to the canyons (except for feeding hours), and betake themselves to the shrubless, weedless and grassless margins of the shale hills.

Hereon grow scatteringly a few primeval bull-pines; most fascinatingly picturesque in their gnarled and writhy and pigmied outlines. But here

and there there stood in early settler days certain narrow areas of second-growth pines. These grew rather thickly together and their forms were as erect as those of their scattering older fellows were wind-blown, contorted, storm-shattered.

These ten-inch pines, with the fairer of their older fellows, began to be cut, in most fairly settled portions of North-eastern Wyoming, years ago, for lumber and for building of corrals. And since, even in so dry an atmosphere, a bull-pine stump rots rapidly, such areas become a mecca for the Long-tailed Black-caps when the instinct of all instincts begins its vernal resurrection.

Such stumps as have been mentioned are usually about two feet, or a trifle more, in height; and they will average from ten inches to a couple of feet in diameter. The bark is decay-proof, while the outer wood layers will well-nigh crumble in a single season. All this the great-great grandmother of all the Chickadees would seem to have learned in the days of earliest human settlement, and so to have taught her progeny to fashion their easily-excavated burrows accordingly.

Most of the Chickadee nests, then, in N. E. Wyoming, are found in these low stumps; the rarity of the sites so commonly chosen by the eastern Black-cap being, to some extent, witnessed by the fact that the writer has found but two examples of such forms of site in two seasons of exhaustive study. Of these, the one was excavated by the birds in a rather sound pine stub, at seven feet of height, while the other was in a canyon-example of the prevalent box-elder. (This cavity, withal its unusual smoothness, roundness and neatness, may possibly have been the work of a Batchelder Woodpecker, though the latter does not knowledgeably occur any nearer the habitat in question than Sioux County, Nebraska.) This cavity has been in use, for at least two seasons, by a pair of House Wrens. The entrances to our Chickadee cavities are most irregular, as the character of the mature bull-pine bark would make inevitable. But the inner cavity varies in tidiness with the conditions of the wood as to degrees of rottenness and the occurrence therein of knots. In any case, however, the cavity seldom "bites" at all deeply into the wood of the stump, since it follows the areas of least resistance, lying thus fairly between the bark and the mass of the rotten wood behind. The cavities range in diameter from about seven inches, at the widest part, to a possible maximum of ten; the depth running from a foot to a rare sixteen inches. A fair proportion of cavities slant to the one side or the other, below the entrance; the grain of the bull pine running spirally, in many cases.

In every observed case except one, every particle of the rotten wood removed in the excavating must have been carried some distance from the spot by the female Chickadee, who does the work (of course). The

amount of labor thus entailed is nothing short of enormous. In view of this fact one is not surprised to note that during the days preceding the taking up of her titanic task, the female Chickadee is unusually droopy, silent and still. (This semi-lethargy seems also to maintain during a short period before egg-deposition begins.)

It seems likely that old cavities are seldom re-used; chiefly, one may presume, because they are likely, as a rule, to prove too much decayed for use. But one re-occupied cavity has actually been observed, that one being the very first domicile of this Chickadee ever observed in nascent occupancy.

This cavity, in a small stump, on a steep side-hill, among primeval bull-pines, was silently being inspected, within and without, on the fourth of May, by a pair of the Chickadees. The observing mortal was careful not to approach the spot for several days, the pair of birds being very evidently just at house-hunting.

A week later the locality was found deserted of all birds. A probing stick brought up no fur; and it was supposed that the site had failed to suit. But on the seventeenth of May, two weeks after the first inspection, a careful observation showed a snug bed of fur. Yet still,—no birds about. On May 26 examination showed unchanged conditions: a flat mat of fur in the bottom of the cavity and no birds in sight,—or even in hearing. Half-skeptically the mat was divided in the middle. Beneath it lay, as the searcher more than half expected, the carelessly-moulded hair nest and the six eggs which appear to make up the normal set of the eggs of the Long-tailed Chickadee.

This absenteeism, from eggs not yet incubated, seems characteristic of this race. Other nests, observed under similar conditions, have showed similar results. Moreover, on the whole the Long-tail is by no means as excitable and solicitous at the occupied nest as his near relatives are wont to be.

The task of removing from two quarts to four of barley-corn-sized bits of rotten wood, one at a time, to some distance from the chosen nesting site, involves, of course, a marked prolongation of the nesting time. In the two observed instances wherein the period could be accurately determined the time of excavation and fur-gathering would seem to have covered about two weeks.

On May sixth, near the close of a fruitless day of canyon climbing, the writer heard faintly the "Be-wary" of a Chickadee, half-way up the canyon-side. Climbing wearily up the student found his soul refreshed, in an instant, by the sight of the nodding tail of a Chickadee whose body was half-hidden within a rather smoothly rounded cavity begun in an eight-inch dead bull-pine. On May 29th, three weeks later, a mat of fur lay at the bottom of the rather small and irregular cavity begun some twenty-four days before.

The Warbler

No birds were present, though speedily appearing, and the usual hair nest with its six eggs lay hidden beneath the felted quilt. This site, as well as the location, though typical of the Black-cap, seems unusual (for Wyoming nestings at least) with the western species. Observed conditions would seem to indicate the first week in May as the beginning of nesting operations for North-eastern Wyoming; and the twentieth of May as about the date for the deposition of the first eggs. Of the latter there seem to be, usually, six; with occasional sets of five or seven.

The Long-tail sits closely on her eggs. In boyish thoughtlessness the



NEST AND EGGS OF LONG-TAILED CHICKADEE

writer once broke open a very rotten stump which showed a very "likely" opening, only to find, at the bottom of the cavity, what he thought to be the mummified body of a female Mountain Bluebird. But the very cautious digging away of rotted wood brought to light a black head and a pair of shining eyes, which seemed fairly to emit light as the heroic mother rose, repeatedly, almost the length of her body, from her heels, emitting what was intended to be a most blood-curdling hiss at every upward thrust. The little mother refused to leave her eggs; yet, to my intense disappointment, when I returned to the spot, after a few moments' absence to secure my camera, she had not only left her nest but refused to return so long as that dreadful

set-up camera sat staring her home so rudely in the face. And this attitude seems generic with these Chickadees.

The Rocky Mountain Nuthatch and the Chickadee occupying about the same sorts of locality in Wyoming for their nesting, one naturally falls to making comparisons between un-allied species that are yet so companionable during almost the yearly gamut of their little day. The Nuthatch husband is a most tender and bountiful provider for his mate during the halcyon days of her confinement. The nesting sites are thus easily betrayed (to the initiate, of course). But this sort of gallantry seems rather rare with the Chickadee. Indeed I have seen but a single example of it. This happened thus:

A Nuthatch was seen to feed his mate in a broad canyon, their whereabouts having been betrayed by their noisy junketing. The male was all attention and every circumstance but three bespoke a nesting place near by. But that female—like some females of human identity—led her ardent human admirer a merry race. Never a Nuthatch so utterly arbitrary and erratic in her manner. Giving every evidence to one skilled in Nuthatch ways of being just about to seek her incubated eggs, she yet led one back and forth, and up and down, through steep gorges and over threatening masses of talus, and all without result. With her adoring mate the Nuthatch had just gone back down the slopes and tarried for a moment where I heard her first, when suddenly the faint “Be-wary” of a Chickadee reached my ears. Instantly eye followed ear to see, in one brief moment, a male Chickadee perching on the lowest limb of a great bull pine at the edge of a little gorge, with a good-sized “worm” in tow. In a surprisingly brief time the ‘little faithful flitted to a large stump on the steep edge of the opposite side of the “draw” and disappeared into the hidden side of the stump.

Strange coincidences happen at times. But a few days before I had been fairly astounded by having genial Mr. Dille, of Denver, coolly refuse an inviting set of the Long-tailed Chickadee, though new to his cabinet. He “wanted no set of less than *eight* eggs, nor did he care for a set which should look, as did many sets of Mountain Chickadee, as if two or three females had taken a turn at starting a family in the same nest.”

Now, this was rather abashing, since most sets of the Long-tail show wide variations in shape and coloration within the same sets, while as for the nests found by the writer none had ever contained more than seven eggs. And so, all the weary way of that long Nuthatch chase, I was pondering polite phrases to assure my very particular friend that his quest for a set of eight eggs of *Parus septentrionalis* was destined to be fruitless ever. Imagine, then, my surprise on climbing that steep bank to the Chickadee stump to find therein a set of *eight* eggs. Moreover, not only was the set so rare in point of number, but the markings were remarkably uniform and of a delicacy I had never seen before.

The date was very late, the tenth of June, and ordinarily such a set at such a time would have been left without a question to its normal destiny. But an inviting translucency in the eggs before me led to a faint hope that so rare a set might be saved to science. And in the issue, to the unbounded astonishment of the manipulator and the deep though quiet satisfaction of the fastidious Denver man, the eggs were all perfectly prepared, though each contained a rather tough embryo. So much for pancreatine, sun-heat, water and patience.

Does a mother Chickadee dig and build and lay again after her first nest has been robbed? It is hard to say, for no evidence has ever come to light for showing whether or no a Chickadee pair ever show fondness for a locality wherein their last year's brood grew up. Yet in any case it salves somewhat the hurt which some of us increasingly feel in egg collecting (and especially where the building of the home has cost so much) to have a proud pair of Chickadees bring their family into the shelter of the second-growth pines beside our cottage, and amid the uninviting heat of August days. The quaint little stub-tailed fellows perch in obstinate quiescence on some dead pine twigs among the lower branches, chirping, at intervals, coaxingly and softly, their wheezy "Dee-did—dee-dit", while mamma rustles for a "worm".

Then the soul of the happy spectator leaps ahead, with expectant joy, to another trysting time wherein the blithe and mellow "Be-wary" of the Chickadee male will lure one afield amid the fitful bluster and fickle sunshine of March and April winds and skies. In reminiscence, one follows the male gallant—even as *he* follows his mate—over talus and wind-fall, over breath-smothering hills and through steep gorges, fitfully chattering all the while, with a deal of unintelligible small-talk. Then rests one, lying on his back, among the nodding pasque flowers while demure little Madam Parus, brooding now whole quarter-hours at a time on some mid-low branch of pine or cedar, utters dreamily her soft, sotto "He-did-it—he did—he did-it—'deed 'e-did—he did—'deed-'e-did". One listens to such soliloquy with a queer little gulp creeping up from his heart to his throat; for it is no impossible leap of fancy to suppose that this fluffy feather-ball may fairly feel already the tickling, by fuzzy heads, of a breast worn bare by very anticipatory love of them. Isn't this fair to suppose, think you, or—were you never a mother?

The White-Eyed Towhee

(THE FLORIDA TOWHEE. *Pipilo erythrophthalmus alleni*)

By Arthur T. Wayne

THE local name of this bird on the coast of South Carolina is the Bull Finch, and I have known it by that name ever since I was a boy. The White-eyed Towhee is a permanent resident, being non-migratory, and it breeds in the same woods year after year, placing its nest almost invariably in low bushes from two to four feet above the ground, but in two instances I have actually found the nest *upon the ground*.

Full complements of eggs are usually to be obtained between May 10 and 12, but on April 14, 1903, I discovered young birds nearly fledged that were being fed by their parents. The season of 1903, was remarkably early and many birds bred that year from two to three weeks earlier than I have ever known before. From two to three broods are raised each year and the number of eggs range from three to four. The last brood is on the wing late in August and almost invariably numbers three, while the first brood usually numbers four.

This Towhee is very much shyer than *erythrophthalmus*, and its notes are in a higher key, while the song is shorter. It never leaves the forest in which it breeds and when *erythrophthalmus* is in South Carolina during the winter and early spring months, *alleni*, instead of being on friendly terms with it, usually drives it away.

It does not require a microscope to identify this Towhee when it is in one's hand, or in the field, as the yellowish white eye is a conspicuous character, and *always* holds good. I have seen the iris *pure* white, and I have yet to see a specimen in a dull plumage that I cannot distinguish on sight.

Mr. Benj. T. Gault, of Glen Ellyn, Illinois, while paying me a visit in March, 1903, secured a female *erythrophthalmus* which has nearly *three* times as much white on the lateral rectrix than several individual females of *alleni*. A female *alleni* that I took on March 3, 1904, lacks all traces of the white spot at the base of the primaries, which is a constant character of *erythrophthalmus*.

Mr. Ridgway in his great work *Birds of North and Middle America*,

p. 426, says that the range of *alleni* is "Florida (grading into *P. e. erythrophthalmus* in Georgia, lower South Carolina, etc.)."

I have always been under the impression that *alleni* is a distinct *species* and not a sub-species, which, in the majority of cases, require a magnifying glass to bring out the latent "characters"! I think that *alleni* should be accorded full specific rank.



Nest and Eggs of Western Gull, Photographed by O. W. Howard on
Santa Barbara Island, Cal., last May.

Chickadee

CHICKADEE, Chickadee,
Don't you think I can see
You at your round little door?
What makes you look so shy,
Has some wild thing gone by,
Or some great hawk circled o'er?

Up in the walnut tree,
Poor little Chickadee,
If it is me that you fear,
Pray let your eyes grow calm,
I will do you no harm,
See me, now, I disappear.

Frank H. Sweet.

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FIG.1



FIG.2



FIG.1 - *DENDROICA PALMARUM HYPROCHRYSEA.*
FIG.2 - *HELMINTOPHILA CELATA SORDIDA.*



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Plate I, Fig. I. Eggs of the Yellow Palm Warbler

NOTES ON THE YELLOW PALM WARBLER

(*Dendroica palmarum hypochrysea*)

By O. W. Knight

THE winter range of this species is chiefly included in the territory extending from Louisiana to northern Florida and eastern North Carolina. The spring migration begins in season so that the first individuals appear near Washington, D. C., in early April, and in Massachusetts about April 15, while by early May the tide of migration has passed onward. The first individuals are seen in southern Maine at dates between April 15 and 20, while the average date of their first appearance on their breeding grounds near Bangor is April 24, the earliest date seen April 23 and latest date of arrival May 4. By the first to the second week of May migration is practically over in the United States, a majority having passed northward while a fair share of the migrating hosts have settled in their summer homes in suitable parts of the state of Maine. As an exceptionally late date for migration Capt. H. L. Spurriney tells me he saw ten individuals of this species at Seguin Island June 7, 1897. They have no chance to nest on this island.

Though one of the commonest and best known of the Warblers along the Atlantic seaboard during the migration, the breeding range of this species was for a long time vaguely known, and eggs of this species are and will continue to be especial desiderata in collections. Though vague hints that this bird had been found nesting in Maine have appeared in the years gone by, the first really authentic record of the actual taking of a set of their

eggs was published by the writer in the *Oologist*, Feb., 1893, p. 14, and this set of five eggs was taken June 4, 1892. A nest with newly hatched young had been found in the same locality by a friend a few days before on May 30. During the 13 years which have since elapsed, the sum total of nests of the Yellow Palm Warbler which I have found or seen found is nine in number, all being within a radius of seven miles of the city of Bangor. There are three authentic records of nests being found at Pittsfield, Maine, and one record of a nest between Burnham and Unity, making a total of thirteen known instances of nests being found in Maine. A detailed record of these nests may be of interest, as they seem to be the only recorded ones from the United States.

Nests found in Bangor Bog, about six miles from Bangor: May 30, 1892, nest on ground in moss at foot of small spruce, contained four newly hatched young; June 4, 1892, nest similarly situated containing four young with well developed plumage; also two nests in similar situations containing respectively five fresh eggs and five eggs incubation nearly complete. These nests were composed of fine dry sedges and grasses, lined with a few feathers and in the case of the one with fresh eggs a few horsehairs were also present. The nests were all well concealed in the sphagnum moss which covered the surface of the bog and were at the foot of small bog spruces. The ground color of the five eggs in question was a peculiar roseate buffy white, fading to white when the eggs were blown. They were sparsely spotted with very fine markings toward the smaller ends while toward the larger ends the spots increased in size becoming blotch-like and tending to form a rather close wreath. The spots were lilac, brown and lavender colored and of varying or intergrading shades. The eggs measure .65 x .51, .65 x .50, .65 x .50, .67 x .50, .65 x .50 inches, which measurements agree very closely with those of other sets since found.

Nearly half of the nests of this species which I have seen were seen on this one day. No other nests were found in spite of most diligent search until June 2, 1894, when at the same locality I found a nest with four nearly fledged young and also a nest containing five quite fresh eggs. June 9, 1901, a nest containing nearly fledged young was found. The final nest for this bog was found June 22, 1905, at which time it contained two eggs, and the number had not increased any on June 26th when I made a final visit to the locality and secured a number of photographs of the nest and its surroundings and collected the set for Mr. John Lewis Childs. This nest was abnormally situated, being on the interlocked limbs of three very stunted spruce shrubs which were growing in a clump, the distance of the nest from the mossy surface of the bog being about a foot. The nesting date was abnormally late for the species and the nesting site abnormal, as all nests previously found by me were imbedded in the moss. The nest was composed of fine grasses and sedges, lined with fine material which appears to be the

NEST AND EGGS OF YELLOW PALM WARBLER IN SITU



The Warbler

fruiting stipes of some species of moss, and a few feathers. The diameter of the nest outside was four inches and inside across the top 2 inches; the height outside 1. 9 and the depth of cavity inside 1. 4 inches.

On the 22nd during a pouring rain storm I visited the bog for the purpose of procuring a quantity of the various species of orchids which grew profusely there, and on brushing by this clump of bushes out flew a bird which I gave a passing glance and pronounced (mentally) a young Yellow Palm Warbler just able to fly, having already seen a dozen of Yellow Palm Warblers with their broods scattered through the bog. For some reason or other I laid my box of flowers down near the spot whence the bird had flown, and proceeded to gather more flowers at other localities. Returning to the spot to get my box after the lapse of half an hour or more, I was much surprised to see the bird again appear from the same spot and alighting this time in a near at hand tree it uttered excited chippings which in Yellow Palm Warbler parlance is equivalent to saying "nest at hand." A diligent search of the surface of the moss around all the clump failed to reveal a nest, and when about to give up disgusted a glance into the center of the clump of spruce revealed this abnormally situated nest.

I returned to the locality again the 25th, finding still only two eggs, and was afforded ample opportunity to observe the parent bird engaged in incubating, seemingly oblivious of my presence. The next day I returned again with my camera in a pouring rain and made a number of exposures of the nest and its surroundings. It had been hoped that there would be opportunity to secure a view of the parent bird on the nest, but it was necessary to cut away some of the foliage in order to give an unobstructed chance to photograph the nest, and after such indignity the parent bird absolutely refused to return and be photographed, though previously to my disturbing the foliage I had been able to approach within a foot or two without driving the bird from the nest. The eggs measured .72 x .51 and .65 x .49 inches. The larger egg seemed to be marked rather typically though slightly larger in size than normal, the other egg was about average in size but the markings were much more distributed over the surface and the spottings heavier and more frequent on the smaller end portion of the egg than normal.

This makes a total of eight nests actually found in the Bangor Bog. The actual number of individuals of this species nesting there each season must be well up in the scores if not in the hundreds, as the bog in its entirety covers a space of several square miles, a large portion of which is suitable for the Yellow Palm Warblers to nest in and they are well distributed throughout the bog. A description of the locality seems advisable as it will be equally typical of hundreds of other similar spots in northern and eastern Maine where this species of Warbler has been observed during the sum-

mer, and must certainly breed. Perhaps I can best describe this bog by quoting from a previous article (Cf. Knight, Contr. to Life Hist. Yellow Palm Warbler, Jour. Me. Orn. Soc., Apr., 1904, p. 37):

"From the northeastern part of the City of Bangor a road, called Stillwater Avenue, runs from Bangor through Veazie and Orono to the town of Stillwater, some ten miles distant. At a point about half way to Stillwater, partly in Bangor, partly in Veazie and partly in Orono, this bog is along both sides of Stillwater Avenue for a quarter of a mile. From Stillwater Avenue on the northwest side the bog extends three miles with various interruptions to Pushaw Pond and along the eastern side of the pond for nearly seven miles. Though thickly wooded or interspersed with alder swamps in limited spots the vast bulk of this bog consists of large, open, boggy expanses thickly covered with a dense carpet of sphagnum moss and dotted with black spruce and hackmatack trees and various small shrubs. Among the characteristic vegetation may be enumerated:—Hackmatack (*Larix laricina*); Swamp Spruce (*Picea brevifolia*); Labrador Tea (*Ledum greenlandicum*); Rhododendron (*Rhodora canadensis*); Low Birch (*Betula pumila*); Pitcher-plant (*Sarracenia purpurea*); Buckbean (*Menyanthes trifoliata*); Arethusa (*Arethusa bulbosa*); Calopogon (*Limodorum tuberosum*); Pogonia (*Pogonia ophioglossoides*); White-fringed Orchis (*Herbenaria bliphariglottis*); Cranberry (*Vaccinium oxycoccus*); Yellow Ladies Slipper (*Cypripedium parviflorum*) and many other characteristic plants, largely sedges. Such is the region preferred by the Yellow Palm Warbler as a summer home, and in the open sunny spots where grow the orchids amidst scattered shrubs and trees you may seek their nests."

Nest building must begin early in May as well grown young have been found the first of June. I am satisfied that both parents share in the duties of incubation and both take part in caring for the young. The nests can be easily located by watching the parents carrying food to the young, but before the eggs have hatched the birds are very shy of approaching the nest when observers are about. The incubating bird will remain on its nest until almost stepped upon before flying, and practically the only way of discovering nests is by flushing birds therefrom, unless some reckless person is willing to visit the bog and spend day after day during the nest building season, fighting the voracious mosquitoes and meanwhile watching to catch the birds in the act of carrying material to the nest.

On account of the comparative inaccessibility of the regions frequented by this species in the nesting season, and the many difficulties in the way of finding nests, eggs of this species will probably always be much sought for by collectors, even though the Yellow Palm Warbler is certainly one of the locally commonest of breeding species of Warbler in northern and eastern Maine, and may be most confidently sought in June in localities amidst such surroundings as I have outlined.

The Warbler

On June 1, 1902, Mr. J. Merton Swain, while in my company, found a nest with five much incubated eggs in a similar bog at Hermon, some five miles from Bangor. Mr. Swain also records a nest found June 11, 1902, between Burnham and Unity which contained four young about a week old. This nest was in a tuft of grass in rather wet land.

The late C. H. Morrell took a nest near Pittsfield, May 27, 1891, (not recorded until some time after my first set was recorded) which contained two eggs of the Yellow Palm Warbler and two of the Cowbird. This nest was in a pasture on side of a knoll at the foot of a small fir bush. On June 25, 1893, Mr. Morrell took another set from a nest situated in a bushy pasture between two small bushes, which contained five eggs. June 13, 1894, Mr. H. H. Johnson took a set near Pittsfield which was placed five inches from the ground in a small spruce bush and which contained fresh eggs.

While the evidence shows that rarely nests are placed a slight distance from the earth in bushes, it is evident that a great majority of the nests are placed on the ground and imbedded in moss, and as those found in bushes at slight distances above the earth were found at late dates for eggs of the species it is quite possible that such nests are second ones for the season, owing to the destruction of the first nests from some cause or other which leads to seeking safety by placing the next nests built on more elevated sites.

While Maine is the only state where this species has been found nesting, I would be inclined to predict that careful search of suitable localities in northern New Hampshire and Vermont will show that they nest there also, and thence northward into Labrador and Newfoundland is their summer home. The southward migration begins as early as August, but stragglers remain in Maine through September and I have seen individuals about Bangor as late as October 1st.

The only sets which have been preserved in first class condition from the total number here recorded are the two sets in the collection of the late Mr. Morrell, one set of which I believe Mr. Morrell sent to the Smithsonian Institution previous to his death; the set in Mr. Johnson's collection; set in collection of O. W. Knight; set collected by O. W. Knight and now in collection of J. Parker Norris; set collected by O. W. Knight and now in collection of John Lewis Childs; making a total of six sets from the United States and all from Maine now preserved in first class shape.

Bangor, Maine, Dec. 28, 1905.

PHOTOGRAPH SHOWING SURROUNDINGS OF YELLOW PALM WARBLER'S NEST. NEST PLACED IN SHRUB IN FRONT AND TO LEFT OF THE UMBRELLA

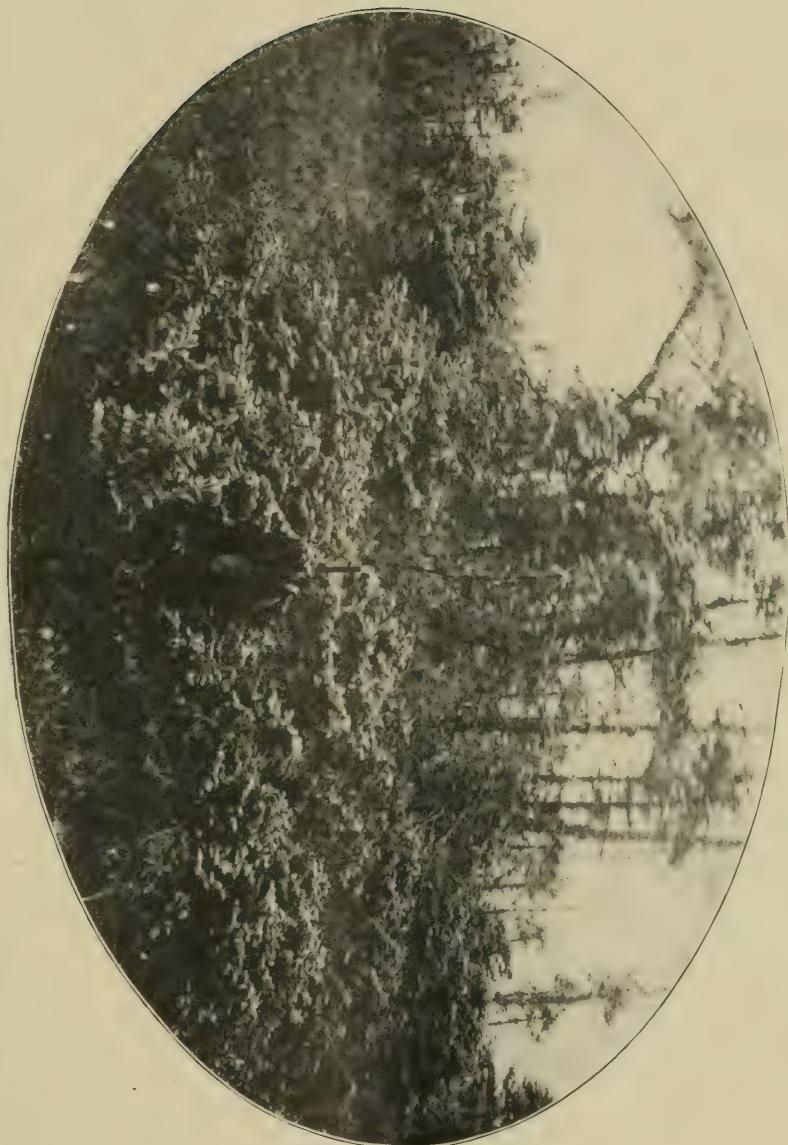


Plate I. Fig. II. Eggs of the Dusky Warbler

NESTING OF THE DUSKY WARBLER

(Helmiuthophila celata sordida)

By O. W. Howard, Cal.

THE Dusky Warbler is a sub-species of the Lutescent Warbler, a much larger form than Lutescent and much darker in color,—feet and beak are noticeably larger.

Up to the present date, so far as I can learn, there has been nothing published on the nesting of this sub-species, and so far as I know its nesting is confined to San Clemente and Santa Catalina Islands. Whether or not this form is a permanent resident of the islands I cannot say, but judging from Mr. Grinnell's report in Birds of Los Angeles County (1898) one would naturally suppose that all or mostly all of these birds leave the islands early in the summer.

Mr. Grinnell's notes read as follows, "This sub-species appears in the vicinity of Pasadena in the oak region and along the arroyas in large numbers during August and even by the middle of July, remaining in diminishing numbers through the winter. The latest specimen noted in the spring was secured by me Feb. 29th (1896). This race is probably a visitant from the neighboring islands of San Clemente and Santa Catalina when the latter are dry and uninviting."

I have long wanted to visit these islands to investigate the nesting of the various island forms but have never had the opportunity until the present year (1905) when in company with Mr. H. J. Leland I made several trips to the islands. On our first trip we arrived on San Clemente Island March 3rd and remained three days, making a complete survey of the canyons and coast on the north side of the island, covering a distance of about twenty miles.

All the canyons on the north side of the island are very steep and rugged, being not more than a mile in length and rising abruptly to the summit of the island to an altitude of over 2000 feet. The sides of these canyons are covered with cacti and low growing brush, while along the bottoms may be found clumps of trees of various kinds, most of these peculiar to the islands.

In these patches of trees we encountered our first Dusky Warblers. Probably a half dozen birds were seen, which were evidently only feeding; we did not pay particular attention to them, however, as we thought it too early for nesting and our time was limited. We made this trip principally for some of the Raptores and for the purpose of locating the country for future work.

On April 1st we made another trip to the islands and this time found several pairs of birds which were evidently nesting. We spent considerable time watching the birds and made a careful search for nests, both on the ground and in trees but principally on the ground, for we naturally expected to find them there. As we went along we found several old nests in the brush, one of which resembled Spurred Towhee and another was undoubtedly a nest of Western Chipping Sparrow. A third nest was a puzzle and caused us to draw on our imaginations. About that time a fourth nest came to sight which very much resembled the last, only as we came closer it proved to be a fresh nest.

This nest was well concealed in the outer branches of a small shrub just out of hand's reach from the ground. By pulling the branch down I could just reach the nest which was soaking wet from recent rains and had the appearance of being deserted. The nest was rather a bulky affair composed of dead leaves and straw, and from the outward appearance one would take it to be the nest of a bird as large as a Towhee or Chat. Well in the center of the bunch of dead leaves was the nest proper neatly lined with goat hair and fine fibers.

It at once occurred to me that this was a nest of the Dusky Warbler, and when I saw the two eggs which it contained I felt sure of it, although I was much surprised to find the nest so far above the ground. I waited some minutes for the bird to appear but in this I was disappointed; there was no doubt as to the identity, however, for no other bird on the island could have a nest and eggs of this description.

The first week in May I again visited the islands hoping to find a complete set of Dusky Warbler. One disappointment followed another. I found one nest which contained broken egg shells, probably the work of rats or mice. Another nest contained three young, which left the nest as I approached, and still another nest showed the young had hatched and flown.

I was about to give it up for this season when I was nearing the top of one of the narrow canyons and came to a clump of wild plum trees growing around a spring (at an altitude of about 1500 feet). The continued moisture around the spring was the cause of these trees being of unusual size, and the dense green foliage formed an unusually good retreat for birds on these practically barren islands. I looked carefully through these trees with nothing particular on mind when I caught sight of a nest in the very top of one

of the tallest trees, about thirty feet above the ground. After some difficulty I reached the nest and found it to contain four slightly incubated eggs of the Dusky Warbler. I had not dreamed of this being a nest of Dusky Warbler, for the other nests I had found ranged from three to ten feet above the ground and were all in low growing shrubs.

This nest was similar to the others in construction but if anything a little larger on the outside; the dead brown leaves and grass used on the outer part of the nest are arranged, as it were, in a shiftless manner, giving the nest the appearance of a bunch of dead leaves lodged in the fork of a limb; the inner part was snugly lined with hair of the wild goats which abound on these islands; a few bark fibers are also used in the lining. The eggs are plain speckled with cinnamon brown, chiefly at the larger end.

Feeling much encouraged with my good fortune I decided to stay another day on the island, so with an early start next morning I began a careful search which finally resulted in a second set of three slightly incubated eggs. This nest was in a green bush overhanging a bank in the bottom of a deep canyon, about four feet above the ground, well concealed in the foliage. Bird flushed from the nest. Altitude about one thousand feet.

Bird-Life in My Florida Garden During the Months of September and October

By H. Nehrling

BIRDS are the poets of the landscape. Without them the world would be a dreary, cheerless place. Life lacking poetry, enthusiasm and ideals is not worth living. Fortunately, however, we find all this in the beauties of nature and particularly in bird and plant-life. In the backwoods of the North the dainty Bluebird, the Robin and the Phoebe are the first to welcome the lonely settler when building his simple log cabin, and in this Southland the ever cheerful Mockingbird and the beautiful Cardinal Redbird are his companions from the beginning, singing their sweetest notes and teaching him continually that man shall never despair.

When I made the first attempt to plant a garden in this Southern "dreamland" in the autumn of 1891 I was quite surprised about the scarcity of birds as compared with similar localities in Texas. This peculiarity I found even more forcibly placed before me in the nesting season—such familiar birds as the Orchard Oriole, Bewick's Wren, the Blue Grosbeak, the Painted Bunting, the Scissor-tailed Flycatcher, the Red-eyed Vireo and its congeners, the White-eyed and Bell's Vireos, the Lark Bunting, the Wood Pewee, the Yellow Warbler and other birds so common in the gardens of Texas have never been observed in my garden or its vicinity. Even the birds usually breeding here in abundance shunned the place during a number of years. This was undoubtedly due to the presence of a large number of tree-climbing snakes, raccoons and opossums, southern gray squirrels and particularly the flying squirrel.

When planting my garden I did it with a view of attracting the birds, of creating homes for many of them. Magnolias (the large-leaved evergreen Southern (*Magnolia grandiflora*), American olives, hollies, dense cedars, loblolly and sweet bays, laurel cherries and wax myrtles were massed together. Of exotic sub-tropical trees I added many species of palms, the camphor tree, the Australian silk oak (*Grevillea robusta*), bottle brush shrubs (*Metrosideros* and *Callistemon*), banana shrubs (*Magnolia fuscata*), star

anise (*Illicium religiosum*), myrtles, oleanders, gardenias, the dense sub-tropical cypresses (*Cupressus torulosa*, *C. sempervirens*, *C. Knightiana*), camellias and cleyeras and many others. Climbers were used largely, native as well as exotic. Berry-bearing shrubs, such as *Raphiolepis Indica*, *Myrica rubra*, and particularly the silver shrubs (*Eleagnus macrophylla*, *E. reflexa* and *E. pungens*) were largely planted.

The entire place is at present surrounded by orange groves and bushy woodlands, the original pine forests having almost entirely disappeared. From my veranda I see the mirroring waters of Lake Audubon glimmering through the vistas of palms, magnolias and bamboos. Near the lake's edge in the rich moist soil large clumps of heliconias, alpinias, curcumas, thalias, crinums and amaryllis are growing vigorously. The garland flower (*Hedychium gardnerianum*) attains here an enormous size and the butterfly lily (*H. coronarium*) is almost constantly in flower, filling the air with its strong and delicious perfume. Immense clumps of colocasias, alocasias and xanthosomas add a decidedly tropical appearance to the scene. But every and all plants are outrivaled by the undescribable splendor and magnificence of the fancy caladiums of which there are over four hundred varieties along the water's edge. No pen and no pencil can convey an adequate idea of the bright and immensely varied hues of these wonderful plants. They far surpass all our imaginative power and we scarcely can believe that such a beauty of form and coloration is possible. These plants in connection with the palms and bamboos and magnolias form idyllic scenes—they are poetical in the highest degree and they always arouse our enthusiasm.

To the bird-lover the months of September and October are very interesting, because this is the migration time of almost all the Warblers, and the majority of the winter residents, among them many familiar to us from our boyhood days arrive now. At no other time of the year are they so abundant. At times the garden is literally swarming with them, many spending only a few days while others delight us with their company for weeks and months. They feel perfectly safe among the dense cypresses, cedars, magnolias and other evergreens and there is a constant chasing and chirping among the branches.

In the early morning hours while admiring my caladiums or working among them a few Little White Herons, Little Blue Herons and Little Green Herons wade fearlessly around in the water scarcely a few rods distant, and the ever-present Pied-billed Grebe—here invariably called “Hell-Diver,” swims among the water lilies and sedges. I have found as many as four and five nests in this lake which are built of saw-grass, sedges and other water plants and which float around in the water. As usual the Snake-bird or Anhinga occupies its place on the edge of the boat landing where it sits for hours motionless, spreading out its wings and holding them in a

perpendicular position. What may the object be of this peculiarity? The bird nests in the cypress swamps a few miles distant and appears soon after daybreak and it rarely leaves its place before the evening falls. It has four or five favorite places around the lake, and it is very tame, often permitting me to come very close up to it. It is, however, exceedingly suspicious when strangers appear. Then it leaves its position, diving and swimming with extraordinary swiftness and beauty. It is a very beautiful and interesting bird and I never tolerate to molest it in anyway.

The Fish Hawk is a rather common bird in this lake region. I usually see him on bright sunny days darting down to the water's surface and emerging with a large black bass or a catfish in his talons. Apparently he begins to taste of his prey while still on the wing, but usually he alights in the top of a tall pine to finish his meal. We sometimes observe the male Bald Eagle sitting quietly in a pine preening his feathers. He scarcely seems to take notice of anything that is going on around him. But all of a sudden we hear his piercing scream. Like an arrow he darts at the Fish Hawk. The furious attack stupefies the Fish Hawk. Without any attempt of resistance he drops the fish and the Eagle catches it before it reaches the ground or the water. With a triumphant cry the latter returns to his mate, which silently watched the combat from the top of a tall pine, and both take part in the meal.

There are quite a number of birds of prey present at this time of the year. Some of them follow the hosts of migrants, others have become more vigilant and impudent since my colony of Cuban Martins left, which took place on the 23d of August this year, after the second brood had become self-supporting. The Gray Kingbird also acted constantly as a sentinel in the tops of pines. No Hawk, and not even an Eagle, dared to come near my garden. They always were furiously attacked and driven away. They never molested the Fish Hawk, however, but they were still more vigilant in their attacks on roving Fish Crows.

The Kingbirds assemble in small flocks by the end of August. They are very fond of the berries of the poke (*Phytolacca decandra*) of which a large specimen stands by my veranda, and sometimes as many as five or six are seen feeding together with Mockingbirds, Thrashers, Red-cockaded Woodpeckers—chickens and common pigeons. In the first days of September they leave us, and the noisy Flycatcher, one of our most common garden birds, follows about two weeks later. The Tyrant family is represented by a few Wood Pewees and the Least Flycatcher during the latter part of September, but their stay is of short duration. In some years I have observed the Wood Pewee very late in spring, which seems to indicate that its breeding range cannot be very far distant. The Phoebe, familiar to me from my boyhood days and a very conspicuous and welcome winter resident, was first

heard this year on the morning of October 11, announcing its arrival by its characteristic plaintive *pewee-pewee-pewee*. Its appearance is almost always a certain indication of cold weather, and so it was this season. The next morning the first cool weather set in, lasting for about three days. It leaves again for its Northern home by the middle of March.

The last calls of the Chuck-will's-widow are usually heard during the first days of September and we do not hear these very pleasant, very common and characteristic notes again until the middle of March. The Chuck-will's-widow is very abundant in my garden and its vicinity and we hear them throughout the spring and the summer months almost constantly as long as the night lasts. Often three and four are heard at the same time but usually one is calling and the other answering. The birds do not leave until October has fairly begun. Chapman's Hawk, a common summer resident, leaves for the South early in September.

Quails are perfectly at home in my garden, large coveys of them being frequently seen. They are so tame that they fearlessly appear near the windows of my study to pick up seeds. At present (Oct. 20) the partridge pea (*Cassia chamecrisita*) and the beggar weed (*Desmodium tortuosum*) ripen their seeds abundantly, the first-named in waste places, the other one in orange groves, and the Quails soon become very fat on this food. Though the hunting season for Quails does not open until November 1, many of them are shot during the months of September and October, and in spite of the game laws and the excellent work done by the Audubon Society many hundreds are trapped just now by unscrupulous persons. In calling the attention to the law and its violations they usually say that nobody can interfere with their doings within their own premises. This is a weak point in our game laws, making it almost valueless. The same holds true of our laws for the protection of song birds. I know a certain vineyardist whose boys annually kill hundreds, no thousands, of Mockingbirds, Thrashers and other small birds with their air guns. Nobody seems to interfere with this vandalism. Birds ought to be regarded as common property and nobody should have a right to kill them on his own place when and wherever he likes. The Mourning Dove, years ago a very common bird, is almost exterminated in our orange groves. I have only seen one pair last summer, and even this was killed while the young were in the nest. The number of these birds are so decimated that rarely one is seen. The Northern birds arrive in flocks of a few to several hundred during the month of October. They are exceedingly abundant in the pine woods, where they feed mainly upon the seeds of the partridge pea and later on those of the pine.

From April to late in September we hear the melancholic cooing of the pretty little Ground Dove (here invariably called the "Mourning Dove") on every bright and warm morning and during the heat of the day. Like the

Quails they fearlessly run around my caladiums where they pick up some particles of lime. I usually see them in pairs. Nests are found as late as Sept. 15, being usually built in thorny orange trees, but I have them also found in silver shrubs (*Eleagnus*), cypresses and dense bamboos.

During the month of September we hear the tinkling metallic call-note of the Bobolinks, here called Rice-birds, flying over the place in small companies. They are at times very common in the moist flat woods, but they are often also seen and heard in the orange groves, where they feed upon the beggar-weed seed.

Warblers are in some years exceedingly abundant in the garden from late in July to November, in fact throughout all winter months. The first ones appearing in magnolias and other evergreens are the tiny Bachman's Warblers which were quite abundant this last fall. They are followed by Parula, Worm-eating, Cerulean and Yellow-throated Warblers in August. By the middle of September we may be able to observe a few Blackburnian and many Prairie Warblers. The Cape May and Black-throated Green as well as the Black-poll Warblers, the Oven-bird and the Hooded Warbler, the Maryland Yellow-throat, the Redstart and a few others are more or less common by the end of September and early in October. At this time the beautiful yellow elder (*Tecoma stans*) opens its numerous umbels of yellow flower-urns. The *Antigonon leptopus*, *Camellia Sasanqua*, *Cosmos sulphureus* "Klondike", *Crinum amabile*, *C. augustum* and *C. giganteum*, the silver shrubs such as *Eleagnus reflexa*, *E. macrophylla* and *E. pungens* and many other plants are fairly swarming with insects. Roses are now in all their glory. The Warblers therefore feel perfectly happy, finding their table well supplied with all kinds of dainty morsels. By the middle of October large numbers of Black-throated Blue and Palm Warblers make their appearance, and finally the last of all, the Myrtle Warblers appear in swarms, being particularly abundant in my garden, where they find an almost unlimited supply of wax myrtle berries, their main food throughout the late fall and winter. The first appear just before a cold norther late in October, the bulk not arriving before the second week in November. The Warblers are more abundant this year than they ever were before, and they usually tarry longer in their fall migration than they do in spring.

Vireos have never been very abundant during migration. They are never conspicuous and are rarely seen, scarcely ever uttering their call-notes. The White-eyed Vireo is, however, an exception. I heard its notes very frequently in the third week of September until the first days of October. The Red-eyed Vireo is tolerably common during the breeding season near Lake Apopka, frequenting the tall trees of the hammock woods.

At times the garden swarms with Blue-gray Gnatcatchers. The birds usually catch flying insects while on the wing, hunting particularly among

the oaks and magnolias. They search every branch, every leaf, every crevice in the bark. Appearing early in September they are present for a day or two, reappearing at intervals of a few weeks almost throughout the the winter. They are great rovers but they do not seem to migrate.

The Tufted Titmouse, the Carolina Chickadee and the Carolina Wren breed in the garden but they are rather quiet birds during the nesting time. At present they are quite noisy, but they are never as conspicuous as I found them in Texas. Formerly the flying squirrels occupied the nesting boxes I had put up for these birds, but since I have waged a constant war against these nest robbers, the three birds have become quite abundant. They are to be regarded as constant residents of my garden. Early in October the northern House Wren appears and remains throughout the winter, singing almost incessantly on bright days.

The Catbird arrived this year Sept. 17. It is at present so abundant that I often observe four or five in the poke-berry bush near the veranda, and its characteristic notes are almost constantly heard from early dawn until the night falls. It rarely leaves for its northern breeding range before May 9—very late indeed. This certainly indicates that its summer home cannot be very far distant. It is always in full song when it moves northward. The Brown Thrasher is very common from Oct. 5 to late in April and a few remain to breed. They are exceedingly shy during the nesting time.

Mockingbirds were never so abundant in my garden (which covers with the adjoining piece of woodland about seven acres) than they are at present, and they never sang so diligently and so beautifully. Especially the young males are incessantly singing in the garden and orange grove—mostly their own notes with scarcely an imitated tone in the performance. They begin at first late in August in a more subdued way in pouring forth their notes. A few weeks later the notes become louder, fuller, more varied and continuous. During our beautiful moonlit nights the song resounds from all sides. As early as the day dawns they commence and they rarely stop when the twilight falls. When occupied among my caladiums, alocasias and other aroids I hear at least four or five sing in the adjoining orange grove and several in the garden. They never fight at this season of the year. In spring the males are so jealous that they do not tolerate another one in their chosen haunts. There is no doubt that they sing here much more frequently and continually in the autumn days "when all nature is in its glory" than in the vernal season. I often count 8 to 10 in the poke-berry bush near the house where they enjoy the juicy berries in company of Catbirds, Thrashers and Red-cockaded Woodpeckers.

The Blue Jays, though very beautiful, are a nuisance in the garden. There are numbers of them in the grounds, and they are a terror to all the

smaller song birds, their nest robbing propensities being particularly objectionable. They torment all the smaller birds and drive them away and their noisy call-notes are constantly heard. They are especially fond of the Japanese persimmons—"a fruit fit for the gods"—and of figs.

Early in September our glorious *Magnolia grandiflora* begins to ripen its aromatic fruit in abundance. At that time the garden fairly swarms with birds, the most abundant being the Blue Jays, Red-cockaded Woodpeckers, Red-headed Woodpeckers and Fish Crows. Allen's Towhees (White-eyed Towhees), Mockingbirds, Catbirds and Thrashers are also exceedingly fond of the berries. The Red-cockaded Woodpecker is a great fruit-eater and a most notorious nest robber, entering even the chicken houses for eggs. In its ways it is very noisy, stealthy and quarrelsome. The Red-headed Woodpecker and the Flicker are noble birds compared with this species, an abundant resident in this locality.

The Sparrow family is poorly represented in this part of the peninsula. Only the beautiful Cardinal Redbird can be called abundant wherever it finds the locality congenial. Dense orange trees, magnolias, palms, cypresses, bamboos, tangled thickets of climbing plants, Cherokee or Macartney rose hedges are its favorite abode. It is now so common in my garden that four or five and often even as many as a dozen are seen together. They fearlessly approach the house and hop around on the veranda. Though not singing during the autumn months their bright red colors in the dense dark evergreen magnolias or on the cypresses have a very charming effect. An English lady friend of mine has called the Cardinal the bird of "fairyland" and the fancy caladium the plant of "fairyland"—they are indeed "dreamland beauties."

The Song Sparrow arrives late in October. It finds a congenial home in the dense shrubbery near the lake. Both the Field Sparrow and Chipping Sparrow are very abundant in the orange grove from the middle of October to March. They find an abundant supply of crab grass seeds on the ground, and during the night and in cold weather the orange trees offer them excellent shelter. The Vesper Sparrow and the Lark Sparrow are also quite abundant in the orange groves, while several other species and the Meadow Lark prefer the flatwoods for an abode.

The white-eyed Towhee, originally a bird of the so-called scrub, nested during the last season in the adjoining woodlands. The whole family now occupies the garden for a rambling ground. By the middle of October the common Towhee arrives from the North. Both are frequently seen together. They are scratching like chickens in the old half-rotten leaves underneath the evergreens. The very characteristic "che-wink" is frequently heard at present.

The Robin, the American Goldfinch and the Bluebird are very com-

mon winter residents, arriving usually late in October. The latter is exceedingly shy, never entering the grounds. Even those breeding here have never made use of the nesting boxes provided for them. They prefer the lonely flat woods for their home, never seeking the society of man here in Florida. I hear their familiar plaintive notes almost daily now when they fly over the garden.

In Texas, in the region between Houston and Austin, I have for years observed enormous numbers of Juncos, White-throated and White-crowned Sparrows and Fox Sparrows during winter, but here under the 28th degree of latitude I never have seen a single specimen.

Blackbirds abound in large numbers, the Redwing and the Florida Grackle breeding within the grounds. In winter they are found in enormous numbers, frequenting with Robins and other birds places where forest fires occurred. They appear, usually, early in October, though the native assemblages may enter the grounds at any time from late in August until February.

The Fish Crow can be seen at present in swarms numbering many thousands. They are great devourers of the magnolia seeds and they even enter the garden in close proximity of the house in order to eat the very juicy and aromatic fruits of the different species of cocos palms such as *C. datil*, attaining the size of a large plum, *C. eriospatha*, *C. Gaertneri*, *C. Falay*, *C. australis*, etc. During their pillaging excursions they are very silent and never utter their unpleasant notes. They never dare to come near the place as long as the Purple Martins and Kingbirds are present.

The rover among our birds, the Cedar Waxwing, is a bird of the mulberry season in March, but flocks not infrequently suddenly appear when the poke berries are at their best, late in August, or when the magnolia fruit ripens early in September. Then they again disappear as mysteriously as they came, being again present when the dahoon is covered with its masses of coral red berries late in October.

The Humming-bird is quite common among the yellow elders (*Tecoma stans*) and the Cape honeysuckle (*T. capensis*.) but I never found it here in semi-tropical Florida half as abundant as in my native state, Wisconsin.

While closing these notes I hear the voices of the Screech Owl and the hooting of the Hawk Owl—both birds that should not be omitted from this cursory list, as they announce their presence always at this time of the day, just as the Sparrow Hawk does during the daytime.

In these last days of October the fragrance of the enormous flower-trusses of *Crinum amabile*, *C. angustum* and *C. giganteum*, the delicious perfume exhaled by the night-blooming jasmine (*Cestrum nocturnum*) and the tea roses is almost overpowering. The moonflower and the large bushes of the *Eupatorium foeniculaceum* in full flower now, exhale a very sweet fragrance. The tall bushes of *Tecoma stans* are weighted down to all sides by their large bunches of flow-

ers. The verandas are bright with yellow allamandas and deep rosy flower trusses of *Antigonon leptopus*. But no flower is more conspicuous at present and lights up the garden so charmingly as does the orange-yellow cosmos "Klondyke."

The Desert Horned Lark

By P. B. Peabody

UNIVERSALLY habitant, universally beloved: that is the status of the Horned Lark this country over. To the critical student this genus affords unending opportunities for study and conjecture. Characters are fluid; and affinities tantalizingly mutual, intimate and confusing. A single conspicuous example may here be writ-down; as having intimate concern with the resident Horned Larks of the region exploited in this paper:

Shifting, ever, with the changes of the seasons, and variant in abundance even in areas of apparent uniformity, the Desert Horned Lark may be found, summer and winter, throughout the strictly prairie stretches of parts of Northeastern Wyoming. Migrational movements are seldom discernible; one being more than likely to confuse the autumnal and wintral flockings of resident birds with the casual or even apparently accidental occurrence of examples of the races breeding quite further to the North.

The writer has sought, for three years, to secure testimony as to the mere occurrence of Horned Larks other than resident. Finding flocks of Horned Larks here and there along his day-long missionary journeys, throughout the fall and winter, he was never able, until April of 1905, to bring into scientific ken examples of northern Horned Larks. But on the above date, taking cue from the unusual abundance of Horned Larks, for several days, in both Crook and Weston Counties, he braved a spiteful belated storm of snow to scour the sage-and-prickly-pear-besprinkled plains near Newcastle. In a flock of a dozen Horned Larks were some that seemed to be things apart. A pair were caught examining the same sage root. Taken at one shot, they proved, with two fine males taken in Crook County on January 3rd, to be typical of Mr. Oberholser's "enthymia"; which stands (in Mr. O's judgment) for an otherwise non-descript race, "proving to be smaller and more highly colored—(with) throat usually yellow,"—as compared with the *leucolæma*,—(now, *arcticola*),—of Coues. (See, Bailey, "Handbook of the Birds of the Western United States").

In essentials, this Horned Lark appears to differ, quite, from its fellow of the Mid-Western States. We do not find it frequenting the ranches, at any time,—though it may, and in some places doubtless does, occur thus.

Neither is it at all common upon the meadows that occur, infrequently, along the "washes." He, then, that would study this dainty little drab must armor himself against the "stings and arrows" of the prickly pear; and thread his devious and finicky way among the be-browsed and bristley stretches of black sage. Here, in breeding time, haunts the Horned Lark of the desert; however much the weedy margins of the winding stage-and-sheep-wagon roads may tempt him, during the stress of the dead times of the year.

Three tricks of cunning choice, equally wonderful and admirable, were



NO. 1—NEST OF DESERT HORNED LARK NEAR MASS OF HORSE MANURE

learned, æons ago, by Desert Horned Lark ancestors and ancestresses; with reference to the needs and the dangers of the nesting time. The hoof of the antelope and the bison were deadly perils once, though vanished, long ago; and the prairie dog, the adder and the whilom hawk are even yet proof against no less formidable a fending than that of the cactus thorns and microscopic barbs: where eggs are to be found.

Yet antelope, undoubtedly, and bison, would refuse to graze, closely, where droppings of the bison were lying; even as it is with cattle and horses,

in our own century. And both bison and antelope would surely tread along the lines of least resistance; so that they, equally with modern bovines and horses, would fail to tread upon ground nests that lay beneath the shelter of a single bush; be it never so scanty and so tiny. And, as for the cactus: no creature would seek food within its horrid domain; where food were elsewhere to be found.

Few students of breeding conditions are liable to grasp, within the earlier periods of their study, the essential link between breeding times and food conditions. Those of us whose limits of original bird study have trailed along the fertile regions of the Middle West can conceive it hardly possible,—for example,—that our favorite Marsh Hawk, which lays, with us, from a normal setting of five or six to a maximum eight eggs should lay but three, in arid Arizona. So, likewise, the neophyte often wonders why the wintering bird should not lay early. Yet only when he pauses to consider that fledglings must *eat* does he grasp the reason for delay. The Chickadee and Horned Lark will rustle, cheerily and with filling success, each for himself, the winter long. But,—feeding, each, a number of other hungry ones,—that is quite another matter.

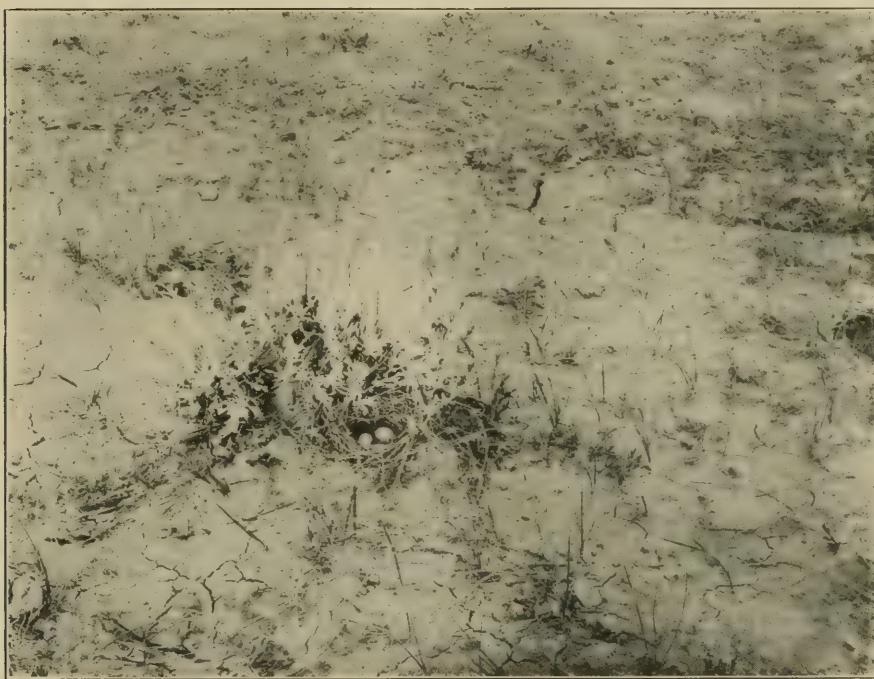
This would seem to explain why the Desert Horned Lark should seem to breed late, on the sage plains of the Great Basin. One relents from generalizing out of a few instances; yet it seems fairly well established that the breeding of the resident Horned Lark, in Montana, is appreciably earlier than on the plains of Wyoming. Prof. Silloway, for illustration, has found nests quite commonly as early as the middle of April in Central Montana; while the writer has never found nests containing eggs, before the first of May. (All this, of course, ought not to be taken as conclusive).

Arid conditions affect the number of eggs, also. I sometimes find sets of four; and even once a set of five. But sets of three are much the commoner; and those of two are not uncommon. Like conditions maintain as regards the number of broods that each pair of Desert Horned Larks may raise: In Minnesota, southerly, it seems clearly proveable that the Prairie Horned Lark normally rears at least three broods per season; but in North-eastern Wyoming, at least, one does not often find evidence of the rearing of even a second brood. This would seem to be due to the fact that the rainfall is often scanty, in the region indicated, after the middle of June.

One is inclined to think that, despite the protection afforded by the sites chosen and by the close-sitting habits of the bird, the mortality, in case of both eggs and young, with this Horned Lark, is very great. One whose eye is ever on the search, over the sage plain herbage, during all June, would be sure to observe the mottled plumage of fledgling Desert Horned Larks; paler though it be, as compared with like phases of the plumage of the Prairie Horned Lark. Yet, in point of fact, fledglings are seldom seen. In

actual fact, the only ones observed, at any time, during two summers, were seen, in a straggling flock, along a weedy stage road in Crook County, in September of 1905. Nevertheless, one presumes that *some* young are actually reared, at each laying, in every season.

Enemies are both rife and abundant. The skunk and the weasel both do their work; and the ground squirrel, where occurring, falls under suspicion. Even the Magpie makes whilom forays into the sage brush; and how the Magpie does love eggs: But the worst foe of all, for all the ground-and-bush nesting *ornis* of the Wyoming prairie land, is the slinking, vociferous and picturesque coyote. The writer remembers a day, once, wherein, along



NO. 2—DESERT HORNED LARK'S NEST ON GUMBO PLAIN, BENEATH LONE SAGE

the softly-rounded hill-and-valley stretches of the IOI Ranch, he ran upon Horned Lark nests, here and there amid the prickly pears or beside cattle droppings. Near one broad, shallow valley, on gentle slopes, a pair of Curlews were valiantly defending a homestead that had been coyote-despoiled; (as proven by the long sweeps made by both parents along the very grass-tops, at the human intruder; these heroic dashes waxing most frantic and vocally hysterical at the spot where the rifled egg-shells were found). Beyond this valley, as I trailed nearer and nearer, in my searching, a pair of coyotes were marauding, furtively, along the hill-sides. *Perhaps* they were

The Warbler

after rabbits; but unquestionably, sharp noses had discovered and sharp teeth had been crunching the contents of many a cunningly hidden nest, among the growths; during all the weeks that had intervened since the first pair of Horned Larks had scratched a nest-hollow in the gumbo soil.

The nests of this race are thoroughly Horned Lark-like. They are chiefly made of grasses; and lined with the fruit of a dwarfed, *carex*-like plant that grows everywhere in the gumbo regions.

The three illustrations accompanying this paper give graphic witness to the use of the three forms of nesting site already cited: No. 1, taken by flash-light, shows an unusually grassy spot, among the prairie herbage; from which the stranger may draw conclusion as to the scantiness of Wyoming range grasses; (whereon, nevertheless, myriads of cattle winter and summer: and wax fat for the block). Many lark nests are placed thus, beside droppings of horses or cattle; usually the latter. (This habit is shared, in a marked degree, by the Long-billed Curlew: see, Sillaway, "Birds of Fergus County, Montana").

No. 2 is, incidentally, of greater interest than both its fellows. The protective conditions which are depicted by it were put to the sharpest of all tests: The location of this site was near a corner of one of the long, long "drift"-fences of the Hundred-and-One Ranch; one mile from the Belle Fourche River; and a half-mile from one of the great discharging stations for the Texas cattle which pour into Northern Wyoming, in myriads, whensoever the great drought-demon lays its clutches upon the Lone-Tree State.

This nest location of a Desert Horned Lark lay in a lean stretch of gumbo; (for, even in gumbo, there are degrees of leanness. The same stiff, clayey soil which will produce, along the washes, growths of white sage reaching upward to five-foot heights becomes, in its extreme leanness, so forbidding that it will but harbor, here and there, a little wisp of a black sage that rivals, in its pitifulness, even the dwarfed salixes of the upper reaches of the Kenai Peninsula of Alaska.) The one insignificant sage depicted stood utterly alone. There was none in the camera's field of view; and there was none for many feet, on any side. The drift fence raised its barbey barrier some ninety or a hundred feet to the left; while on the right was perhaps fifty feet more, of lateral area, that was frequented by the bands of cattle which, pouring forth from the stock cars in half-famished procession, streamed upward from the tracks and over the hills to the few half-fertile valleys of open range beyond.

Along this "road-way" there had passed, the week before this picture was taken, a band of fifteen-hundred "dogeys." We passed through the "bunch", a half-hour after they left their cars; and leaner kine no mortal ever eyed. Any sturdy ranch-man might easily have shouldered three-

fourths of those spindle-legged, slab-bodied yearlings; which reminded one of the "self-sharpening" type of Southern hogs so wittily made immortal by the late, brilliant "Sam." Harriman; prince of story-tellers, in Northern Wisconsin: "Why, gentlemen,"—the "General" would say, in the telling of his Southern experiences, in war-time,—"those mangy little long-legged pigs would squeal all day long for corn wherewith to get strength to squeal for more corn; so as to get strength to squeal for more corn,—to give them more strength to squeal!" Of such a type, and of equal hungriness, were the fifteen-hundred yearling cattle,—"dogeys,"—all of whom passed within one-



NO. 3—DESERT HORNED LARK'S NEST, WITH PAVING, AMONG PRICKLY PEAR

hundred feet, on either side, of the one small sage bush alone upon that gumbo flat, along the drift fence. No wonder, then, that the photographer stood and gazed in wonder at the unharmed nest, with its two half-incubated eggs; on every side of which, but a few inches away, were the non-obiterated tracks of many a passing hoof. A beating storm, but a few days before, had left few marks, except the leveling of the always-roughening clay, of the hoof-beats now replaced by the yawning cracks made in the gumbo by the penetrating fierceness of a three-days' sun. (So do sun-beat and rain-dash and hoof-stroke and tooth-cut incessantly change, on the desert plains, the outward and apparent semblance of almost everything save the impregnable cactus and the immortal sage!)

In No. 3, we have the portrayal of a fact that is new to science. This fact, so far as I know, was first made known to the world of bird students by Prof. Sillaway in his "Birds of Fergus County, Montana;" and this negative is the first pictorial witness to the habitualness of the trait repeatedly noted by Mr. Sillaway. This keen teacher-student notes, in regard to several nests of the Desert Horned Lark, in Fergus County, Montana: that they were "banked round with bits of dirt or clods;" or with "fragments of cow-chips." Of this sort of Rock-Wren-like decoration the writer has noted but two instances: one in each of the two Wyoming counties above referred to. In the Weston County case there were but two or three bits of gumbo, from a half-inch to an inch in discal diameter. Of the same sort of paving in the Crook County nest there were, by most careful count, no less than forty pieces. These appeared to have been gouged out by the cattle hoofs; and gathered by the larks not long after rain. It was, however, impossible to conjecture whether or no such clods had been added, at varying times, after the first completing of the nest. A habit so striking and so widely negatived by any evidence drawn from observations covering nests of any other Horned Lark races ought certainly to stimulate any and all students of nesting habit not utterly absorbed by the sordid and degrading habit of egg-collecting for the mere collection's sake.

It only remains to give another instance of shelter protection, much like that just given: in this case, the protection of a not-large, not-heavy mass of prickly pear, in an open area, among the sage brush: About a mile from the IOI Ranch drift-fence the nest in question was found. It had been betrayed, as usual, by the rising of the sitting Lark; when the approaching man was yet some fifty feet away. The three eggs, appreciably darker and more heavily dotted than the usual run of stippled drabs and greys, among Horned Lark eggs, had been taken; and the site marked, for photographing, at a less windy hour, by the tying of a small streamer of white cotton rag to a sage-top. The morning hours and half the afternoon were then devoted to a harum-scarum, unsophisticated search after Curlew nests: on the part of an eager mortal whose wit proved dull, indeed, when pitted against the cunning of the wonderfully nonchalant yet watchful sickle-bills.

In the stiller hours of the early-summer afternoon the Man and the Camera set out, over the divide, for the Horned Lark valley. There, however, all was changed. At edge of the half-dry wash, at the bottom of the valley, a score of cow-horses were encircled by a rope corral. Near by stood the chuck wagon of 'Hundred-and-One; abutting, as usual, against its tent. And everywhere, on hill-side and in valley, were scattered bands of cattle gathered, from scores of miles, during the June round-up, just closing. These, as they shifted unceasingly, in their feeding, gave to the eye and brain an uneasy hypnotic suggestion of swoon: a will-destroying impulse to dash, headlong, beneath the feet of grazing cattle.

The whole face of the slopes had changed. Cropped were the grass-tufts; torn were the tenderer growths of sage; defiled with dung were the scattered faces of white, scarlet and pale-yellow flowers. Some curious steer had found and eaten my white-rag signal: and the Horned Lark nest was hence found only through that experience-sharpened sense of location which becomes habitual with the bird student when afield. All, near the nest, was despoiled and desolate. A bit of prickly pear, ground from its fostering root by some treading hoof, lay just at the edge of the nest; but the nest, itself, lay quite intact in the hollow so lovingly scratched for its reception. And then, as I ruefully stood gazing at the close-by puddle of cow-dung that utterly dashed all thoughts of negative making, two round-up men came cantering by; curious to divine the presence, in those uninhabited miles of waste, of a man on foot. The photographer gave instant proof of his sanity; and one of the cow-boys quietly suggested: "You'd better come and eat."

Safer it was to obey than to decline. Moreover, the early-morning lunch had done the utmost of its duty long before. And so, while the Five-o'clock Shift were roping their horses, the naturalist, a thing apart, sat on his haunches, within the tent, partaking of a stew more tender and juicy than any of which a gourmand ever dreamed; eaten, in utter silence, among a group of men as reserved and silent, that waning afternoon, as they would be vociferous, to-morrow evening when, the round-up ended, they would shoot up some saloon in the whiskey-ridden and brothel-debauched sheep town, three miles away; wantoning away the night and the hard-earned dollars won by the stern rides of many a sleepless night, among the stamping herds. Hurrah, then, for the poker game and the fast-emptying flask and ribald gestings with shameless women! And then, at dawn, hurrah and away, on the bronchos patiently standing, untied, still bridled and saddled, along the dusty streets,—hurrah and away with one last whoop and a parting shot and empty pockets,—away to the ranch, again, across the ragged outlines of the plain: scaring the trios of coyotes, in their jack-rabbit coursing, with shouting medley of eager cries; and startling the male Horned Lark who is out for the first mouthful of morning food, wherewith to stay the hunger of his mate and of the ugly nestlings that are beginning to quiver, with pangs of hunger, beneath the warmness of her brooding breast.

An Explanatory Note

Editor Warbler:—

Prof. Lynds-Jones, Editor of the *Wilson Bulletin*, published at Oberlin, Ohio, has made the following announcement:

"In the West, two bird books of great importance are in preparation"—(one of these) "is being prepared by Rev. P. B. Peabody, now of Newcastle, Wyoming, upon the Nesting Habits of Our Birds. This book promises greatly to advance our knowledge of the birds, along these lines; where the author is well-known to be specially strong."—(*Wilson Bulletin*, No. 53.)

This statement, so generously yet so unexpectedly made by Mr. Jones, makes it necessary that the Preparator of the projected book on the Nesting Ways of North American Birds give a very brief summary of what is intended in this work; what accomplished and what yet remains: The work is to cover, exclusively, the domain of nesting habit for all North American birds whose summer homes are north of the Rio Grande. (Nothing comprehensive has been said regarding colorations and dimensions of eggs; this element having been, already, quite sufficiently exploited, elsewhere.) Relations of location, site, period, and manner at and near nest have received most careful attention. All valuable authentic sources have been ransacked, for these data, except the formidable, and unindexed files of the *Proceedings of the Boston and Philadelphia Academies*; the *Ibis*; and the writings of Gundlach. These are yet to be exploited. Over and above these, the Preparator has been able to secure the kindly co-operation of over thirty field workers and advanced bird students; a large number of these being men of national reputation. Out of the entire field covered by the A. O. U. Check List, but about a hundred and twenty titles yet remain without authentic data.

P. B. P.

The California Bush-Tit

(*Psaltriparus minimus californicus*)

By Harry H. Dunn

 OR fourteen years have I lived in Southern California, and for the last ten of these fourteen I have been interested in the study of its birds, but in all this time, during which I suppose I have seen the nests of at least half of all the birds that breed here, I have found no one more interesting than the Bush-Tit.

Wherever you go in the Golden State, south of the dividing line of the Tehachepi mountains, from 2000 feet elevation in the coastal ranges to the willow groves that border the sea, there will you hear the incessant *chip-chip-chip* of these little Tits as they move ceaselessly up and down and around the trunks and limbs of trees. In the piney slopes they are met with but sparingly, and in the zone lying between the actual rise of the mountains and the oak flats—that sage-grown sand plat given over to Gnatcatchers and Sparrows—the Bush-Tit seldom if ever appears. The oaks and the willows seem to be their favorite trees. Often I have thought I had it figured out to a nicety just which one of the two they liked best, and then would come a long week or two collecting among the *other* kind of trees and I would find so many of the little fellows hanging their beautiful homes in the sheltering branches that I would be compelled to change my mind.

Frequently, in the Southern California hills a straight, tall sycamore will rise from among the oaks. In these the Bush-Tits play and seek their food of gnats, flies, worms in the crevices of the bark, etc., but I have yet to find one of their nests in a sycamore. Even in winter, when the branches of the sycamore are quite bare, and when the Orioles' nests show up for hundreds of feet as they swing from the sycamore limbs, one never notes the peculiar nest of the little Tits, though the oaks on the flat below usually keep several nests from season to season. Similarly, in the lowlands, water beeches rise among the willow trees, but in these the Bush-Tits do not seem to care to make their homes, though the Kingbirds and Crows and the Long-eared Owls and the Red-bellied Hawks seem to prefer such exposed situations.

And even in his protected haunts, where tree-trunk and leaf and shad-

ow all conspire to conceal the pair from their enemies they, most silly, would seem, do not try to hide themselves. All day long they flit about on tireless wings or run at random over the branches, all the time keeping up their noisy chatter, than which there is no sound of all the outdoors more calculated to attract attention to its maker.

Yet, and this the more strange because the nest is so bulky, the woven home of these birds is one of the hardest for human eyes to locate of any I have ever tried to find. Wherever a pair of the Tits are heard chirping, somewhere thereabouts, you may be sure, there is a nest—but where? there's the rub! Made of the gray down from blossoms and from half-dead leaves, the whole bound together with cobwebs of about the same color, it matches so well with the coloring of the under side of the leaves of the oaks or with the trunks of the willows that the moment the eye leaves it, once located, it merges itself into oneness with its surroundings and the whole search has to be gone over again.

This, too, brings to my mind another interesting point: In oak trees Bush-Tits, one and all, hang their nests well out on the tips of limbs; in willows they invariably place them close to large limbs or on the main trunk, where some little branching stub gave them a hold for their hanging home. At first the reason for this is not apparent, but as the birds which build in the willows and those inhabiting the oaks are one and the same species, I am forced to the conclusion that it is solely the protective instinct (Mr. John B—— to the contrary, notwithstanding,) that has driven them to it. In the oak trees, the nest is more like the under side of the leaves, and the thickest foliage is placed directly on the ends of the limbs which overlap and form a practically rain-proof shelter. Hung next to the trunk of the oak the difference in color would be at once apparent to the most unobservant; hung in the thicket of leaves, it is so well concealed that I do not believe the collector lives who can find one nest in ten in a search of any well-inhabited oak grove.

In the willows all this is different. Here there are no thick shelters of leaves; the trees rise straight to the heavens, with their greenery strung out over them like the barbs on a regular wire fence. But the trunks and the branches are the identical color of the blossom-down from which the Tits make their homes—and the birds, accordingly, hang their nests directly alongside some perpendicular trunk, usually larger in size than the nest itself will be when completed. And anyone who thinks the long, pensile gray bags so situated are easy to find ought to take a "hike" with me some afternoon looking for sets of these.

I remember one of the first nests of these Tits that I ever found: It was hung well out in a huge live oak tree, fully twenty feet from the ground, amid a tangle of very small limbs. As usual, the birds led me to it after I had watched them for half an hour or more, being first attracted by their

noisy chirping as they hunted gnats on the rough bark of the tree. Up I went, up and out on the small but tough branches. I reached the nest, lifted the bottom up so that by slipping my finger down the entrance way I could feel the eggs. Yes, there they were, a nestful. I took out my knife preparatory to cutting off the branch, when, dab, something hit me on the cheek and in another moment the air was full of bees. Right above me, barely three feet from my head was a huge swarm, hanging like some great wasp's nest from a limb.

Apparently I had shaken them up in moving out on the branch to the nest and they were getting restless. I knew enough about bees to know that if I went on about my business the chances were that the little stingers would go on about theirs. And they did; I came back safely, nest and all. In the treasure house were seven perfectly fresh eggs—a beautiful set, both for size and incubation. Small and white, not so large as the egg of the Lawrence's Goldfinch, yet resembling them in outline, these are among the most attractive of all white eggs to me.

This nest was nothing less than a work of art, and so typical was it of the best in Bush-Tit architecture that I will attempt to describe it to you: In the first place it was sixteen inches long, a monster for size, by fully four inches in thickness. The bottom four inches was closely woven and entirely solid, a felted mass of willow and sycamore seed-down. Through it were scattered at random the silver seeds of some milkweed, giving to the exterior a peculiarly beautiful mottled appearance. Evidently the winds blew quite strongly down this little canyon for this bit of ballast could not have weighed less than two ounces—amply sufficient to hold the airy cradle in a very rough wind. I have found these nests in sheltered places, where the wind seldom blew, and they would have a scant one inch of flooring; this, however, was the thickest and heaviest nest I have ever seen.

On the inside the bed of the nest was lined with a layer of floss from the seeds of the milkweed (all the hard seed capsules removed, mind you,) fully half an inch in thickness. In it the tiny eggs were all but hidden from sight, and I could not help thinking into what a warm and downy cradle the featherless young would have come. Above this for a good inch the wall all round was so closely woven and felted that it did not seem possible for any air to enter. Behind all this, however, there was a reason, and the reason was this. Above the solid wall—just high enough to protect the whole of the young birds' bodies—the tightness of weaving relaxed and a perfect openwork lattice admitted all the air that youngsters or mother could possibly require. All of this was bound together with wonderful firmness by means of nothing that I could find but *spider webs*. The glutinous secretion with which Hummingbirds and Gnatcatchers are provided seems to be wanting here, but the Tits have been more than equal to the demands of the situation.

At the top of the nest, where it was fastened to the branch and where was placed the entrance way, the walls thickened again and the chamber within narrowed down to a tube, barely wide enough for the mother to squeeze through. Evidently it was so planned that she could brace her feet against the sides and so climb out with little chance of disturbing the precious eggs. One twig from the oak limb ran straight across the neck of the nest, scarcely half an inch below the hole. This was apparently for the especial use of Mother Bush-Tit as she entered and left the nest. Indeed, while I watched the pair, after they had seen me at the nest, they flew repeatedly through the cloud of bees and seemed to be seeking some familiar perch—possibly the male bird was in the habit of roosting there by night.

As has been said, the eggs resemble those of Lawrence's Goldfinch, except in size. When blown they lose the pinkish luster which adds so much to the beauty of all thin-shelled white eggs. They are very fragile and more delicate to blow than are any of the Hummingbird's eggs I have ever collected.

FIG. 1



FIG. 2



FIG. 1 - *EMPIDONAX INSULICOLA*.

FIG. 2 - *EMPIDONAX GRISEUS CANESCENS*.



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JOHN LEWIS CHILDS, EDITOR

Plate II, Fig I. Eggs of the Santa Barbara Flycatcher

(*Empidonax insulicola*)

EARLY in May, 1905, Mr. O. W. Howard visited Catalina Islands off the coast of California in the hopes of finding the Santa Barbara Flycatcher breeding, as up to that time the nest and eggs of this species were unknown to science. His trip was not in vain, for on May 4th he took two sets of four eggs each; also the nests and the parent birds. The nests were found in a canyon, six to seven hundred feet altitude, one being in the fork of a limb of a large shrub some eight feet from the ground; the other in a like situation ten feet from the ground. Both nests are well built, the material used being bark fiber, vegetable down, grasses, moss, etc. The eggs are exceedingly handsome, and our colored plate represents one set exactly as to size and color. Both sets with nests and skins are in our collection.

J. L. C.

Plate II, Fig. II. Eggs of the Gray Flycatcher

(*Empidonax griseus canescens*)

NESTING OF THE GRAY FLYCATCHER IN CALIFORNIA

By Joseph Grinnell

IN 1897 I found the Gray Flycatcher (then called *Empidonax griseus*) to be fairly common in July on the higher portions of the San Gabriel Mountains in the vicinity of Mount Waterman. I obtained adults and young not fully grown, and upon these and a few migrants from the neighborhood of Pasadena was made the first record of the species for California. Since then many fall, winter and spring specimens have been noted from various parts of southern California, but nothing further has been published in regard to the breeding grounds or habits of the species.

The summer of 1905 I spent in field work, with Joseph Dixon as assistant, in the San Bernardino mountain range. I had previously heard of a small Flycatcher said to occur in the vicinity of Bear Valley, and the species had been variously reported as the Hammond, Wright, or Western. But no specimens had been forthcoming, so that I entered the mountains with a particular desire to determine this matter. As a result, a series of 67 adults and young of *Empidonax canescens* was secured together with several nests and two sets of eggs. Upon these and accompanying field notes, the following account is based.

The Gray Flycatcher was the most abundant member of the Tyrannidæ found in the San Bernardino Mountains. Yet it was not noted below 6000 feet nor above 9500 feet. To be more accurate, the Gray Flycatcher was in summer restricted closely to the upper transition and Canadian life zones. In August we found that a few had spread down into the lower transition zone, doubtless as a beginning of the fall migration. The species was found to be numerous in June and the first week of July on the mountain slopes south of the headwaters of the Santa Ana and west of its tributary, South Fork. From the lower edge of the fir belt up nearly through the Murray pines on the slopes of San Gorgonio Peak, this Flycatcher was seldom out of hearing, though individuals were often so wary as to render even a glimpse of them difficult to obtain. But after we had learned their various notes, by

this means the presence of the Gray Flycatcher was easy to detect. For it is a notably noisy Flycatcher, particularly in the early morning and late evening, and I wish I had the vocabulary to properly describe its many notes.

The species was not noted so far down the Santa Ana as Seven Oaks; but on the north slope of San Bernardino Peak, a few miles south, and between 7000 and 9000 feet altitude, I noted a number on July 12. In the neighborhood of Bluff Lake, 7200 to 7900 feet in elevation, the Gray Flycatcher was actually abundant during the latter part of July, particularly after young began to appear on the wing. Here, the last of August, and up to September 4, when we departed, it was still numerous, even more so than earlier, for now full-grown young predominated. One juvenal was taken in a clump of Murray pines toward the west end of Bear Lake, July 31. On the north side of Sugarloaf, 7500 feet to 8500 feet, August 19 to 24, I obtained adults and young. And finally, at Saragossa Springs, on the northwest side of Gold Mountain, at about 7500 feet elevation, a specimen was taken and a few more seen, July 31.

It was in the vicinity of our base camp at the mouth of Fish Creek that we gathered most of our knowledge of the nesting of the Gray Flycatcher. Hitherto, authentic eggs of this species had not been reported, and as soon as we were aware of its presence we began to keep a keen eye out for nests. But in spite of the fact that the birds were plentiful, relatively few nests were discovered. I had an idea that the Empidonaces in general build close to streams, as do the species with which I was previously familiar. This idea was strengthened by my seeing the birds fly-catching close along the creek among the alders and willows. But the birds also affected the dry black-oak woods, and the fir belt high on the dry, though shaded, mountain slopes. And it was here that the majority of the nests are probably built.

Our first nest was found by Dixon on June 14 by the roadside in the Santa Ana bottom some two miles below Fish Creek. This was at an altitude of not much over 6000 feet, and was the lowest point at which the species was observed anywhere in the mountains. However, it was on the shaded north slope at a place where the upper transition zone extends clear down to Santa Ana; in fact the first firs one meets with on his way up the canyon occur there. The nest was located five feet above the ground in a *Ceanothus* bush. It was lodged near the extremity of an obliquely-growing stem, and rested against it at a point where it frayed out into numerous smaller twigs, so that the nest was well supported on all sides. The nest was compactly constructed with the rim smoothly rounded off. It was composed basally of a mass of grayish weathered grass blades and stems, most closely felted towards the rim, where the same material prevailed but more finely shredded and mixed with bits of plant down and spiders' web. From the outside the nest looked gray, but the inner lining was brownish in marked contrast when the nest was viewed from above. The inside materi-



NEST OF THE GRAY FLYCATCHER

als included very fine plant stems, a few dry rootlets, and several slender shreds of cedar bark. A few feathers were also woven in, one large horned-owl feather projecting conspicuously above the rim on one side. The measurements of the nest were outside, diameter 3.00 inches, depth 3.30; inside, diameter 1.80 and depth 1.60 inches. This nest contained four eggs with incubation well advanced, though not so far but what they were safely blown. This set with nest and female parent are now in the collection of Mr. John Lewis Childs.

The second nest discovered was within 50 feet of our camp at the mouth of Fish Creek, 6500 feet altitude. On June 15 it contained three newly-hatched young. By July 2 these had flown. This nest was located in a willow clump up the side of the canyon 50 yards from the stream, and was saddled into the upright crotch of a good-sized stem, about two feet above the ground. On account of its handy location this nest was under frequent observation. The most remarkable thing about it was the wonderful harmony in coloration between the gray nest, the silvery gray willow trunks surrounding it, and, when on the nest, the parent bird with its gray head and upper surface. I would repeatedly have to look for the nest quite a while, although I knew for several moments before discovering its outlines almost exactly where it was. This was certainly of protective service, as far as human beings were concerned anyway. It was only by continued watching of the parent birds as they brought food to the young that the nest was discovered in the first place. The old birds did most of their foraging among the thickets down along the creek. From there they would fly close along the ground directly up to the nest. When leaving, they would fly up into the pines above to preen themselves a minute, and in the case of the male (presumably) to sing a little. While brooding the young the parent bird at the nest would indulge in faint mellow twitterings, so that we knew of each visit, although we may have been out of sight in the work tent. As the young grew older the parents became quieter, maybe because they were kept busier.

The third nest, found on June 17, contained four eggs on the point of hatching. These could not be saved though the nest was. The latter was located in a willow clump on the side of a small canyon near Fish Creek, 6500 feet altitude. By the way, this species of willow (*Salix glauca villosa*) is not the same as that growing along the water courses (*Salix lasiolepis*), but affects dryer places, such as shaded hillsides and semi-wet pockets in the mountain side from 6000 to 9000 feet altitude. The Gray Flycatcher has especial regard for such willow thickets, and doubtless a large proportion of nests are built in them. Though this willow is not a dense-foliated one the nests are difficult to make out among the gray trunks, as previously explained.

The present nest was three feet above the ground, resting against an

upright dead willow stalk, and outwardly supported by two diverging branchlets. In this sort-of-tripod crotch the nest was built up, loosely at the narrow bottom, until the divergence permitted space enough to complete the rim with sufficient internal diameter. Some of the nest material straggled down between the upright supports, but the sides towards the top, and the rim, were compactly woven. The composition was almost wholly of strips and finely-shredded fibres from the silvery-gray weathered inner bark of old willow stems. The inside lining was finest-grained and mixed with very fine plant fibres, bits of plant down, and a few feathers. One Bluebird wing feather was woven into the wall. A curious addition was a penny-sized tuft of flying squirrel fur which occupied the centre of the bottom of the nest cavity, and against which the four eggs rested. In fact the fur kept the eggs from quite touching one another. This nest measured 3.00 inches in outside diameter by 3.15 in outside depth, and 1.80 in inside diameter by 1.60 in inside depth. It is pertinent to note that the inside measurements of the nests of any species of bird are constant, while the outside dimensions may vary greatly, of course dependent largely on location.

The fourth nest was found June 21 at about 9000 feet elevation near Dry Lake. It held four eggs in which incubation was so far advanced that I was unable to save them. The nest was situated ten feet above the ground in a Murray pine sapling growing among larger trees on the mountain side. It was a large loose affair lacking the compactness characterizing all the other nests examined. It was built against the slanting pine stem, supported by a cluster of twigs with their foliage. The material was the usual weathered inner bark of the mountain willow, and its light gray color rendered the structure quite conspicuous against the dark pine trunk and foliage. At the sides and bottom skeins of this material straggled down loosely and bits adhered to the twigs and bark for several inches from the nest proper. The inner lining consisted of the same stuff mixed with fine brown bark strips, slender rootlets and a few down-feathers. In external measurements this nest was 3.70 inches across by 3.20 high; and the inner cavity was 1.85 across by 1.60 deep.

I found the fifth nest on July 5. This was at about 6700 feet elevation in the black oak belt a half mile southeast of Fish Creek. The nest contained three half-fledged young, and was situated 6 feet above the ground among the dead twigs of a fallen branch which leaned inverted against the main trunk of a medium-sized black oak. This nest was compact like numbers two and three already described, and in general size and composition resembled them closely.

Yet another nest was found in the lower Fish Creek canyon, 6500 feet, on July 6. It was saddled into the upright forks of a small balsam cottonwood, each of the forks being about two inches in diameter. Very likely because of its cramped location, the bulk of this nest was less than that of

any of the others observed, though the composition was in no way peculiar. The bird was flushed from the nest, revealing a single egg apparently fresh. But a subsequent visit was disappointing, for in the interim Jays devastated the site.

I located the seventh nest on July 5 when a bird was discovered sitting closely upon it. The nest, though empty, seemed to be finished. On July 10 Dixon revisited it and secured the set of three eggs, a complete complement as shown by dissection of the female parent secured with it. This nest was 9 feet up, saddled onto a horizontal black oak limb two inches in thickness. It was located just beyond where three twigs diverged so that the walls of the nest were supported by them. In fact the rim was woven over a down-curving branchlet on one side much after the fashion of a Vireo's nest. An oak leaf was fastened in on the opposite side. Spider's web was identified as the stuff used to bind the constituent material together and to fasten the whole structure to its supports. The nest was composed externally of gray weathered grasses and shredded strips of the inner bark from dead willow trunks. It was lined within with fine strips of brown bark and other plant fibres, with a few down-feathers admixed. The whole structure was unusually compact. It measured in inside diameter 1.80 inches by 1.60 in inside depth; and in outside diameter 3.15 by 2.25 in height. This nest with the eggs and female parent is now in the collection of Mr. John E. Thayer.

The eighth and last nest was found on July 21 at Bluff Lake, 7500 feet altitude. It was only two feet above the ground in a chinquapin thicket on a low hillside. The nest rested in a spray of upright shoots; but little could be judged of its structure for it was flattened down by the full complement of four two-thirds-grown juvenals which it held.

The seven eggs of the Gray Flycatcher which I preserved agree in being plain cream-buff, or to express it in another way, white tinged with cream-buff, but with not a trace of spotting. The set of four are all ovate in shape and measure in inches .75 x .56, .74 x .55, .74 x .56 and .75 x .55. Of the set of three, one is rounded ovate, and two are short ovate. They measure .70 x .57, .70 x .57 and .67 x .56. The average of these seven eggs is thus .72 x .56, or substantially larger than the average of 111 eggs of the Wright Flycatcher (the nearest relative of the Gray), as given by Bendire—.68 x .52.

Pasadena, Calif.

Pinyon Jay

(“THE BIRD THAT NEVER BREEDS”)

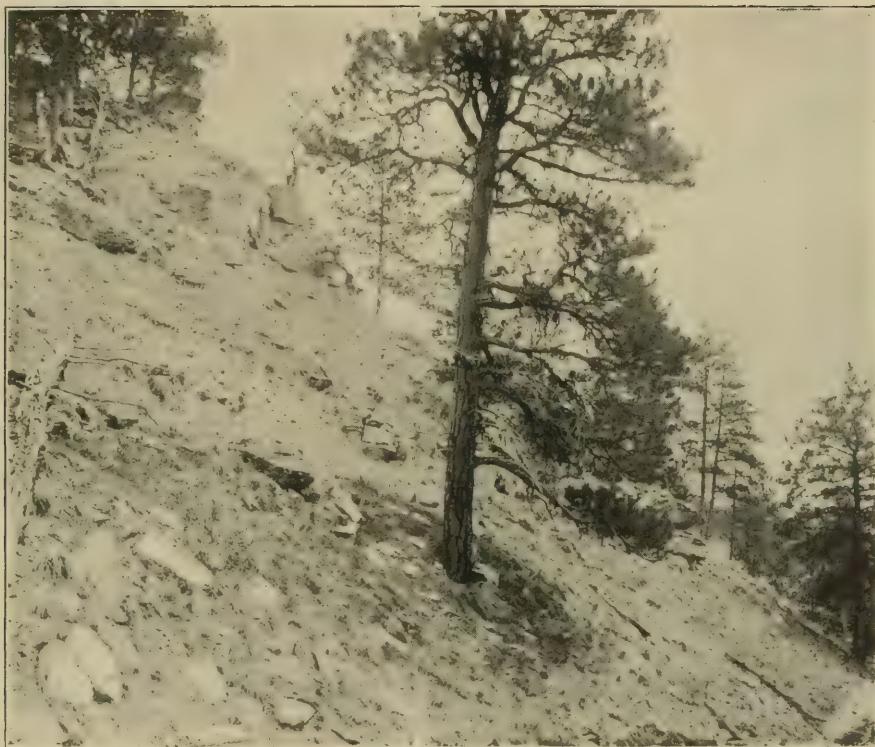
By P. B. Peabody

CONFUSION reigns in the mind of the Wyoming native concerning the merits of the Pinyon Jay. He is cock-sure—this same native,—that the Pinyon Jay is the “Camp Robber”; perhaps because all robbers look alike to him. He is also certain that the Pinyon Jay never rears any young; and truth to say the writer hereof, having spent several days, recently, in search of Pinyon Jay nests in a locality wherein he saw these noisy creatures by the dozen and by the dozen duplicated, yet finding but a single occupied nest, is inclined to the same opinion.

Soberly speaking, the Pinyon Jay is a puzzle. And the better you come to know him the more of a puzzle he becomes. All winter long, in the sub-tropical climate of Northeastern Wyoming where the thermometer varies and veers, wintrally, between fifty-above and thirty-below, the Pinyon Jay is a familiar and impudent frequenter of village homes and of ranch environs. He is fond of wheat: by nature; he revels in garbage: by acquired taste.

Of an unvaryingly social nature, this Jay is found, where found at all, in considerable numbers. One is tempted to believe, as the result of extended observation, that the Pinyon Jay is sociable chiefly because he loves to quarrel. Other possible motives underlying the social instinct remain as yet unrevealed to those bird-loving mortals who are constrained, through many years of bird study, to confess; that “the way of a bird in the air” is no more wonderful than the ways of a bird in its nesting time and in its mutual relationships; and that the goose who attributes human motive to the birds really knows no more about bird psychology than does any other goose!

To the newly arrived habitant, the Pinyon Jay acquaints himself quickly, *in Wyoming, on his arrival*, in a vocal way. One hears, whatever the time of year, a whining cry in mid-air, as of a dozen week-old puppies; and is rather slow in connecting the sound with its winged source. But he perceives, ere long; that the resonant and fairly-pleasing sound emerges from the throats of a dozen or more dark-looking birds that are flying, concerted-ly, two hundred yards or so above the listener’s head.



PINYON JAY AND SITE

The Warbler

A few moments later a little of added Pinyon-Jay-knowledge comes to the mortal. Stalking with impudent yet ever-watchful familiarity about the back door of some citizen, but a few feet from the observer, the Jays are foraging. To them, nothing swallowable comes amiss. Here and there, with restless haste, the birds quarrelsome gather what they can find where-soever they may find it. Push and grab prevails; and "the devil take the hindmost." And when that hindmost suddenly awakens to the consciousness that most of the flock have heeded the call to onward march from some tacitly recognized leader, (a cry which no mortal may distinguish from the ordinary call-note whereby, apparently, the members of a flock are kept together), he rouses himself from his gutter-searching with a strident "*tur-a-rurt-turt*"; and away he goes, with throat distended by garbage,—away after his departing fellows among the tops of the bull-pines. From all this one may readily infer; that the Pinyon Jay is impulsive and erratic. In these two traits he is doubly a Jay.

As to the habits of the Pinyon Jay during winter in the neighborhood of ranches the writer cannot say. He has, indeed, seen them under such circumstances feeding, night and morning, with their usual quarrelsome sociability, atop the stacks of unthreshed grain. It is safe to conclude, even from this narrow observation; that feeding habits in town and in field quite naturally correspond.

If such a thing be possible the noisiness of the Pinyon increases with the inflowing of the tide of Spring-time ardor. The swift spiral wheelings of the flocks, in air, increase; the masses of birds, from fifty to a hundred in number, begin to split up into love-making trios; and the season of reproduction begins emphatically to assert itself, thus; even in birds that "never rear any young."

One is inclined to believe, from the notes taken during three breeding seasons; that the times of beginning vary considerably from year to year with reference to egg-laying; and that this variance has apparently little to do with the weather conditions. To illustrate: in 1905 the search for fresh-laid eggs began in mid-April; on the basis of the previous year's study. Yet the first nest found contained eggs in which the embryos were nearly feathered; while a group of four nests found, quite without local precedent, within a hundred yards, mutually, from one another, in twenty-foot young pines atop the canyon-side, were all furnished with young. These from a week to ten days old; (with slight differences in age within the same nest.) In the last week of March, 1906, the search for nests began. An all-day traversing of the familiar canyon-sides whereon were found all previous nests, revealed but two completed nests. These were far apart; and contained no eggs. They contained, on the sixth of April, sets of five unincubated eggs. This number, five, is regnant in Wyoming.

The sage observation of a seemingly intelligent ranchman to the effect



PINYON JAY BROODING

that the Pinyon Jay never rears any young receives a quasi-corroboration from the fact ; that one may not find one nest for every twenty-five or more of birds familiarly and constantly observed within the limits of the breeding area. In very truth, it seems that many Pinyon Jays do not breed at all, during given seasons. Hypothetically, this barrenness is a question of age. (The same condition appears to maintain with the Canada Jay ; at least in Wyoming.) These non-breeding birds frequent, during the breeding season, the grounds wherein are found the few scattered nests of fertile birds. They do not separate ; but keep in more-or-less compact flocks ; whether feeding or resting or roosting.

The Pinyon Jay is erratic in its choice of breeding locations. Yet it is perhaps hardly more so than are many other birds of its class. In the main, the locations are found invariably along the bull-pine-bristling sides of canyons. These locations are usually remote from the immediate winter haunts ; and from the abodes of man. The chosen trees are usually rather small ; and situated, almost invariably, rather isolated from their fellows. An occasional hemlock sapling will contain a nest within the density of its leafy mazes ; but such sites are unusual. The sites occupied vary much. The norm would seem to be the horizontal limb of a bull-pine ; and usually the lowest limb. This is even the case where the chosen limb is within reach of the ground ; but this height is unusual. The nest-heights range, in general, from six feet to twenty. Few nests, (in Wyoming), lie outside these extremes. A few nests are set close to the trunks of the chosen pines : and such nests are usually quite elevated ; (apparently for the securing of suitable surrounding twigs for the sustaining of the nest.)

Few bird fabrics are more uniform in material and structure than the nests of the Pinyon Jay. The chief observed differences are in size and in the inner diameter. The chief underpinning of the nests will consist of willow and aspen twigs. With these are commingled, externally, the stems of a plant, (*artemisia*?), that retains its bleached leaves on the stem, in dying. Various other plant stems are added to the fabric ; which is by no means always bulky, for a Jay nest. The nest-linings are almost invariably composed of a very fine, bleached bark ; suggesting a dark-colored hemp in texture and in color. The entire nest is invariably quite deeper, relatively, than nests of the Blue Jay ; and often more broadly cupped. An occasional nest is relatively monstrous ; reaching a size quite double that of small nests of this Jay.

One is inclined to wonder whether the alleged community nestings of this Jay are not mythical. The Pinyon Jay is very common in Weston County, Wyoming ; (though curiously rare in Crook County, just to the north). Yet the group of four nests referred to above is the only instance of any observed condition which could in any sense be tortured into comparative harmony with the prevailing idea as to the nestings of this Jay ;



YOUNG PINYONS IN NEST

and yet no two nests of this one group were nearer each other than several hundred feet.

The young Jays begin to manifest their noisy identity everywhere, among the pines of the canyons and the shale hills, quite early in June. Their incessant fire-alarm call resounds everywhere at all times of the day; from the hour when the first brood leaves the nest, in early-June, until old birds and young, breeders and non-breeders, begin to scatter, in their foraging, some time in September. It is asserted that the Jays begin to frequent the grain-fields at this time, or earlier. This assertion, like so many others elaborated in Wyoming, will bear investigation. This really dainty-colored bird is yet, as above observed, a rather gross feeder; and he is, withal, quite too wary to brave the dangers of the shot-gun and the "twenty-two," with all the concomitants of these, to leave the insect food he so greatly prefers; until the on-coming of cold and snow compel him to a granivorous diet. And even then he seems to find the town, even where the sling-shot prevails, a safer place than the ranches.

A sketch of the life-trait and habits of this Jay would be incomplete without some reference to certain questions bearing upon the pathology of sociable birds.

Dissection shows the Pinyon Jay to be frequently infested with parasitic worms. These are found in the flesh, at times; though usually in the intestines. An occasional bird appears to be diseased in the digestive organs. One such, a lone and miserable wretch, the writer would have put out of misery; but that guns are tabued in town, even in Wyoming. Two other abnormal creatures arrested my attention; as they struggled with their fellows for a share in the feast of oats which had been provided for the nourishing of the Jays and for my own entertainment; in a pine-tree but two feet from my study window. The one of these had the upper mandible at least one-third shorter than the lower; while the other was "shy" in just the other way.

The proper thing in oat-eating etiquette should here be explained: Save when ravenously hungry, a Pinyon Jay never bolts an oat, hull-and-all. The custom is to seize an oat from the trough; and then fly with it to the edge of the trough or to some convenient near-by twig. The oat is then deftly transferred from the beak to the claws; and held crosswise between the feet against the twig. A few neat strokes of the bill follow; and the grain is extracted quickly from the hull. The entire operation is done much more quickly than the time consumed in the telling; and with marvelous ease.

It is a beautiful mark of the adaptitude of many animals to unusual or changed conditions that my two Jays of the mal-formed beak were just as deft and quite as swift as their more perfectly equipped fellows. The chief differences lay in this: the Jay with the short lower mandible did not stoop so far at his work; while he of the stubby upper-mandible had to stoop much

farther. As to the exactness of the observations herein involved there can be no cavil : the one of these birds came to my granary at least once ; and the other twice ; while in each case the bird was carefully observed at a distance of not over five feet. This oat-eating operation has been watched by the writer frequently ; and with ever-increasing marvel at the dexterity of the birds.

In the genuine corvine style, these Jays roost at night in the usual diurnal flocks ; these divisions being, however, possibly consolidated at times. Apparently some birds resort night after night to the same identical twig for their roosting ; the droppings observable beneath the trees being sometimes incredibly great for a single night's accumulation. By noting these spots on the bare shale beneath young and dense-leaved pines one may form an intelligent idea as to the extent of a roosting place.

This habit of keeping compactly together, even at night, on the part of Pinyon Jays, became amusingly yet startlingly illustrated for the writer, but a few days since : An entire day had been laboriously and fruitlessly spent in searching the canyon sides for nests. A few pairs of evidently mated and rather solicitous birds had been found here and there amid the old, familiar haunts. Two or three flocks of twenty or more unmated birds, each, had been surprised while feeding in a "bedding ground" of range cattle ; (this particular natural corral consisting of a bunch of bull-pines clustering together, curiously, among glacial boulders on the open prairie, park-like reaches on a "divide" between the canyons). But signs of nesting had been unexplainably few ; and the tired naturalist was plodding doggedly homeward, just at night-fall, among the freshet-piled masses of boulders along a canyon bottom. Here and there a solitary young pine stood among the sparse hemlocks and cedars along the canyon walls. No migrant birds had yet begun to arrive ; and the brilliant White-winged Juncos, Long-tailed Chickadees and Solitaires were silent. Then, suddenly, out of the utter stillness, as I passed, there burst out a deafening chorus of "*rurt-a-turt*" cries ; and twenty or thirty bohemian Jays tumbled, scrambled and darted from their snug resting places in a dense pine out into the nascent night ; and speedily disappeared into the silence and the gloom of the semipiternally gloomy canyon-walls.

FIG.1



FIG.2

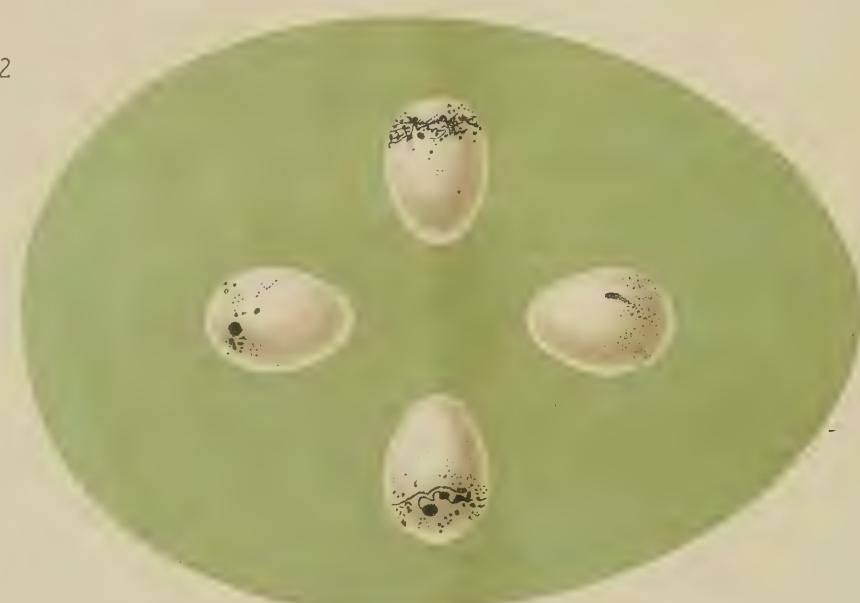


FIG.1 - HYLOCICHLA BICKNELLI.

FIG.2 - GEOTHLYPIS TRICHAS SINUOSA.



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THIRD QUARTER, 1906

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JOHN LEWIS CHILDS, EDITOR

Plate III, Fig. I. Eggs of Bicknell's Thrush

(*Hylocichla alicæ bicknelli*)

NONE of the North American Thrushes lay so beautiful an egg as does Bicknell's and none are so rare. So far as we know there are but three sets in existence, of which the set of three eggs represented on our plate (Figure I) was the last to be taken. For full particulars regarding the taking of this set see WARBLER No. 3 of last year, page 67. Our colored plate represents this set of three eggs accurately as to size and color.

Plate III, Fig. II. Eggs of the Salt Marsh Yellow-Throat

(*Geothlypis trichas sinuosa*)

WE are disappointed in not having notes on the breeding of the Salt Marsh Yellow-Throat to publish in connection with Plate III which shows a set of eggs of this fine sub-species of the common Yellow-Throat (A. O. U. No. 681c.) Mr. H. R. Taylor was to supply these notes in time for the present issue of the WARBLER, but owing to a long and severe illness with which he is afflicted he has not been able to prepare anything for publication yet, but we hope to have it for our next issue. Of all the North American Warblers none lay an egg which, to our mind, is quite so beautiful as that of the Salt Marsh Yellow-Throat, a complete set of which is accurately represented on our Plate.

Rocky Mountain Nuthatch

BY P. B. PEABODY, WYOMING

AMONG recent differentiates there are few birds more deserving of indisplicable sub-specific rank than the White-breasted Nuthatch of the Rocky Mountain Region, far and wide. And there is positively no bird in all America that holds the rare spirit of affection-winning from the human race to so high a degree as this. Conjugal affection is fascinating to the regenerate, everywhere. In the mutual spirit of birds that brave all storms and all weathers in unbroken harmony, mate side by side with its mate, there is somewhat that wins both respect and regard from the sensitive and the susceptible, everywhere.

But there is more than this in the mystery and fascination which surround this Nuthatch. The very fact that he seems to be very little known, even among advanced observers, must count for much. That he has, moreover, certain unique habits of nesting must give him a unique distinction to those observers and chroniclers of bird habit with whom no toil is too great no hardship too severe if undergone in the discovery of something new. In proof of the assertion made above Figure I is offered; without explanation or comment. The writer will be very greatly interested to have suggestions made by readers of *THE WARBLER* as to what the Nuthatch pictured in this plate is doing with himself.

During all winters and all winter-times, in Northeastern Wyoming this Nuthatch is a frequent sojourner in all sorts of woodland places; and even, on accidental occasion, in the vicinity of homes. At such times, quite as much or even more noticeably than during the breeding season each male will be found to have his mate. And the tender deference he pays her, amid winter scenes, is greatly akin to that which most of birds display during the nuptial season only. In apparent carelessness of each other's possible straying the two birds will search for their winter food together; picking some fat cocoon from its cache and giving it a most vigorous thrashing atop some dead limb. In this very strenuous process the bird exerts, relatively, a giant strength; lifting itself, at each stroke, by its momentarily-uplifted wings. In this process of maceration the fortunate finder will seem quite absorbed. Yet if the mate have wandered beyond its sight the one-time ab-

sorbed bird calls out most musically and cheerily his resonant,—“Here-here-here-here-here ;” and the two are soon again beside each other ; meeting, under such circumstances, with a frequent tremulous spreading of the fore-wings. Like most other birds that are “racially-sedentary” these Nuthatches nest late. And they are quite as fugitive in this same nesting as are most birds of their sort. The call of the Nuthatch is frequent enough, during the neutral seasons of the year. But when nesting time approaches both birds would seem to be well aware of the unwisdom of betraying the whereabouts of the home-that-is-to-be by any unwary sounding of their little



FIGURE I.—ROCKY-MOUNTAIN NUTHATCH

trumpets. Yet after the eggs are laid and the sitter begins to sit and the male is all attention he seems to forget, in what one may judge to be the tender joy of his service, the caution that is due to the cunning and the covetous. His call to his mate will hence resound widely and iteratedly even though he be far from home ; only the booty in his beak betraying the object of his earnestness. At and after this point in the episode of family rearing both Nuthatches are as unsophisticate as any young human couple ; betraying their mutual tenderness by calls and wheedlings and curious caresses in any and all sorts of places. (Among the hardly-translatable cries and calls



FIGURE II.—A SLENDER FOOTHOLD

characteristic of both sexes, with the Rocky Mountain Nuthatch, there is one greatly curious and suggestive call of the male. It consists of a soft, long-drawn, "Tay-turt," four times repeated. This call so intimately resembles a certain apparently playful call of the Pinyon Jay that one may readily imagine the Nuthatch-call as possibly patterned after it.)

Figure II portrays a probably normal tree-site of the Rocky Mountain Nuthatch. The cavity, in this case, lay squarely beneath the dead limb on which the male is sitting. The cavity is a round one, surrounded by solid wood; having been caused by the living wood entombing a dead limb. The enclosing tree is utterly sound; though but a shell. It is a bull-pine; of the type so commonly characteristic of the Wyoming shale-hills. These locations held in common, with the varying forms and habits of nesting, by the Nuthatch, the Long-tailed Chickadee, the Mexican Cross-bill and the Audubon Warbler.

Like its congeners this Nuthatch ordinarily makes no *nest*. The material that surrounds the eggs is a strange conglomerate; made up, in greater part, of dis-integrated pellets ejected by birds of prey or voided by coyotes. It is most interesting to note; that this material seems to be irregu-

larly added at all times after the first choice of the home. Material is often brought to the nest as late as mid-incubation time. The female seems to be the enlarger of the home. Often one may see her, after he has found her nest, coming out to meet her mate, as he comes with provender. Having lovingly received his tribute, she is apt to give herself a little outing; ruffling her feathers, twisting her tail, and giving sundry ventriloquial little vocal evidences of her satisfaction. (These actions and sounds not infrequently betray her home.) Straying a bit away from her precious eggs little Madame will suddenly return; bearing, mayhap, a great wad of pellet-hair: so great, indeed, that she sometimes drops it beneath her door, unwittingly. Figures III and IV portray what seems a quite unusual nesting site of the Nuthatch of the Rocky Mountain Region. The stump in question was a much decayed one amid others on the slope of a shale hill, beneath the shelter of yet-standing pines. The bottom of the nest was but a few inches above the ground; and the cavity but about nine inches in height. The entrance was very irregular; and the cavity still more so. It appeared to have been made a year previous; apparently by Chickadees. The containing nest was beautifully made; and the blackish hair of which it mostly consisted made



FIGURE III.—UNUSUAL NESTING SITE

delicate contrast with the pearl-white eggs. This set was of unusually heavy marking; equalled, in this respect, only by an imperfect, (or depleted?), set of two eggs found by the writer on a Tenth of June: (the date being quite two weeks late, with well-incubated eggs.) One set, found, as have been two others, in a site unpublished, thus-far, was most beautifully and delicately speckled with very pale cinnamon. A medium between these two "types" of markings would appear to be norm, with this Nuthatch.

As might be inferred, from the habits of her congeners, the female Nuthatch of this "breed" sits closely on her eggs. In one case of the



FIGURE IV.—MALE ROCKY MOUNTAIN NUTHATCH ON STUMP

writer's finding she refused to leave the nest. And when the intruder tried to pry her off her treasures, to see how many there were of them, she pecked his fingers vigorously. But one learns by slow degrees, that it is never at all safe to generalize about these things. At times a female will leave her eggs when the human observer is yet far away; and she will continue to be wild, even after her mate has entered the nest under the very nose of the human; the male continually coaxing and calling his consort; as if to strive to show her how little danger there is in the presence of a mere *man*!

During the present season the writer has sadly failed to find the homes

of a number of rare birds of the Wyoming region that he has found so fertile in unexpected surprises. Yet it was but the day-before-yesterday that he, while strenuously bending every energy toward reaching the nest of one of a pair of White-throated Swifts, half-way up the wall of a forty-foot cliff of sandstone, in a vertical crack, discovered that a pair of Nuthatches were busily engaged in a dead cedar that stood at the very edge of the cliff. The young were apparently still quite tender; judging by the frequency with which they were fed. One parent or the other would come with a small morsel of food at frequent intervals; the feedings often coming, during the short period of conversation, but four or five minutes apart at the best. And the manner of the parents was greatly engaging, in this process. They seemed more curious than resentful, at the presence of a man; even when that man had the hardihood to climb their favorite tree. And when they would come, one or the other, with food, it was greatly amusing to watch the stealth they would always display, before entering the nest cavity. With a manner characteristic of many nesters in hollow places they would make ready to enter; would actually bury head and even neck in the nest hollow; and would then execute a right-about in the twinkling of an eye. This might happen a dozen times, in the extreme; before the parent would finally make up its mind to enter fully.

In most of its ways the Rocky Mountain Nuthatch seems quite unlike its con-specific fellow of the Eastern States. Its notes are wholly different; and its feeding habit, during the winter, noticeably variant. One trait, however, it shares with all its genus: that of curiosity. During the past winter, at the edge of the Bear Lodge "Mountains" at Sundance, I found a whole troop of winter sojourners and habitants, one sunny noon-tide, mobbing the only Rocky Mountain Screech Owl it has ever been my good fortune to see. And among the medley of Cross-bills, Chickadees and White-winged Juncos there appeared one pair of Nuthatches; discreetly joining in the outcry: from the ground. And sometimes man may summon an exceptionally curious Nuthatch near; by simulating the cry of the Chickadee. For these two are kin; and their united animation, industry and vocal cheer make glad and bright many an otherwise sombre winter day.

Long Island Bird Notes

ON June 2nd I took at Smithtown a fine set of six eggs of the Ovenbird, which is the largest set of this species that has ever come under my observation.

On my lawn at Floral Park thirty to fifty pairs of Robins breed annually. I think there are more here this year than ever before, and the early nesting seems to have been unusually successful. The first young birds on the wing were noticed May 28th, while during the first week in June there was a score of them to be seen.

Whip-poor-wills on the east end of Long Island seem to be diminishing. In sections where they were very abundant ten years ago it is only occasionally that more than one or two may now be heard during an evening. This is not owing to any change in conditions in one particular locality at least (Smithtown, where I observed them,) as there has been no new building, no cutting off of forests, or, in fact, any changes that would make the section less desirable for this bird, and I fear the species is diminishing in numbers.

A pair of Sparrow Hawks were found nesting this spring in a small piece of woods near Belmont Park, which is almost within the city limits of Greater New York.

One day early in May a Cormorant visited a small trout pond at Smithtown and remained for about twenty-four hours. He was observed by a number of natives, the oldest of whom were entirely unfamiliar with the bird and declare they had never before seen one on Long Island.

On June 2nd a Black-billed Cuckoo's nest was observed at Smithtown with two eggs, one of which was just hatching. This is the first instance of this bird breeding on Long Island that has ever come under my personal observation.

On June 2nd I discovered in a cedar tree near Smithtown what appeared to be the foundation sticks for a Blue Jay's nest. The nest had evidently been started and abandoned. On these sticks was a Whip-poor-will's egg the contents of which had been extracted. Also the shell of a Blue Jay's egg. As Blue Jays were nesting in the vicinity I give them credit for having perpetrated this piece of mischief.

The durability of the nest of the Baltimore Oriole is remarkable. In a Weir's cut-leaved maple near my house hang three nests of this bird, built respectively in 1904, 1905 and 1906.

Young Catbirds and Chipping Sparrows were on the wing June 8th, and Brown Thrashers the 12th.

J. L. C.

Nesting of the Roseate Spoonbill in Florida

BY R. D. HOYT, FLORIDA

ON the morning of March 22 we are going to visit a colony of Spoonbills situated on an island in a large lake back of Cape Sable. Between our camp on the bay and the lake is five miles of prairie, so-called, but in reality a marsh covered with a thick growth of marsh grass, a few inches of water, and some mud which we many times tried to investigate the depth of without success. Hip boots were left in camp as they are ugly things to manage when full of water, and when a fellow goes down it makes it easier for the other fellow to pull him out.

We reach the lake in due time and found a very small scow that had been left by a "gator" hunter some years before; it is very rotten and full of holes, which we stop with rags brought for the purpose, and it is fixed so that by constant bailing it will hold two of us up for the few minutes required to reach the island.

I take my place forward with collecting basket between my knees and we were off. Up to this time no birds were in evidence but a sharp turn around a point to our right brings us to the island and into the midst of bird life. Here are the Spoonbills! A dozen or more sitting on a mangrove bush resemble a mammoth American Banner rose in full bloom—white, pink and richest crimson with the dark green foliage of the mangroves as a setting is a picture long to be remembered.

While the scow returns for my companion I work my way through and around the tangle of mangrove roots to the centre of the island and up one of the largest trees where I can get an outlook, and by keeping perfectly quiet the birds soon return to the nests, which are all around me,—American Egrets, Anhinga and Spoonbills, all mixed together and looking very much alike except that the Egrets are broader, flatter and more loosely made.

Some of the Egret nests contain young, newly hatched, and in a very short time the old birds are back feeding them, while those that are brooding quietly fold up their long legs and settle back on the eggs. The sitting Anhingas keep their long snake-like necks moving in every direction and seemingly never quiet.

On the return of the scow we proceed to look up a few sets of Spoonbill eggs. Some nests are still in course of construction, some contain but

one egg, but we find a number containing full sets of 3 and 4 and one with 5 eggs, which is an unusual number. The latter nest being a very perfect one is taken in situ, and is now in Mr. Childs' collection.

More light is needed on the building habits of this species. From perfectly reliable sources I know that they have nested in January in the cypress swamps east of Cape Romano, and on March 26 we took a specimen on the way home among the Ten Thousand Islands that was evidently but two or three weeks from the nest. Near my old home on Old Tampa Bay numbers of young birds arrive by May 1st and these of course are from a much earlier nesting than the rookery we visited at Cape Sable in the latter part of March.

I might add here that the Spoonbill is rapidly diminishing in numbers from no apparent cause, as they are not, like the Egrets, being exterminated for their plumage. Ten years ago several hundred spent the summer in the Bayou near my home; these have grown less year by year until last season I could count but forty individuals.

The Gnatcatchers of Southern California

751A WESTERN GNATCATCHER (*Polioptila caerulea obscura*)

753 BLACK-TAILED GNATCATCHER (*Polioptila californica*)

SMALL and perky, blue-gray and black, almost the color of the sage and chemise brush in which they constantly make their home, incessantly noisy, there is no bird of all the Southwest more easily heard and less easily located than either one of these busy insect-hunters. Both are residents of the sections they inhabit, but both are what might be called "local migrants," frequenting at one time of the year the low foothills and at another the slopes of the higher mountains. High or low, however, they most commonly frequent brush-grown washes, "California rivers," dry as a bone all summer and grown up to a mass of thick shrubbery, about waist high, and in some cases almost impenetrable. Here the incessant twit, twit of one or both of a pair of Gnatcatchers will be heard for at least every hundred feet of progress one makes. If the way be particularly easy, so that the observer makes little noise, the birds will come boldly about him, keeping up an incessant chatter, perhaps a trifle noisier if the nest be near, though they seem to have little idea of concealing that home by silence as is the practice of so many small birds.

These homes are built in the forks of the branches of any suitable shrub, sometimes several feet from the ground, more often a yard or less, and are perfect little cups of softly felted plant down, fibres from the inner bark of such trees and dead cactus plants as they may be able to find, and an occasional horsehair, though this lining is not often resorted to save in very barren districts where plants bearing any sorts of down are scarce. There seems to be little difference in the nest built by the two species, nor in the materials used. But the birds are so well distinguished that the collector has little trouble in correctly identifying the nests found. The most common of the two is, of course, the Western Gnatcatcher, and nine out of ten of the sets taken in this end of the state belong to that variety. It is very unreasonable in a choice of nesting sites, selecting one season a well-wooded bit of wash, and the next an apparently barren and unsuitable place, while all around are much better situations—from a human standpoint.

Several writers, and even as good an authority as Davie, claim that there is a difference in the eggs of the two species, but from a long string of sets which have come under my observation I am unable to agree to this. To my mind they are absolutely indistinguishable, especially a few days after being blown, when the eggs of both species fade considerably, becoming a pale, washed-out blue, instead of the deep green they possess when freshly laid.

In common with all small eggs, for these are but a trifle larger than those of the California Bush-tit, they are very fragile and the work of preserving them must be very carefully done. Three sets of each species, four eggs in each set, mostly recently obtained, are dated from May 8 to July 2, and this seems to be about the range of their nesting.

While on a trip in the desert region of California a few years ago I saw only a very few of these birds on the eastern slope of the Sierra Nevadas and none at all out on the real desert itself. There are many birds on the great sandy plain however, and I hope, at some future date, to be able to tell you some interesting things concerning them.

Harry H. Dunn.

The Chuck-Will's-Widow

(*Antrostomus Carolinensis*)

BY ANNIE E. WILSON, KY.

THE "Chuck-Will," Southern Kinsman of the Whip-Poor-Will, so common in Florida, is a larger bird with a shorter note than its brother of the North. In fact it is the largest species of the genus known in North America. It is migratory, reaching Florida about March 10, and leaving some time during the month of August.

Its chant, beginning with a sort of "Chuck!" like an exclamation point, has but two distinct syllables which sound like "Where's Will?" and is heard quite early in the evening, continuing for some hours into the night, one answering another from tree to thicket as if the whole community of Chuck-Will-dom were out hunting for a lost child. Then for a while they are silent, too busy feeding, perhaps, to let their voices be heard. A few hours before daylight they begin a short, final search for the missing waif before retiring for the day.

The waifs they are so diligently seeking are the large beetles and moths upon which they feed and which like themselves turn night into day. The motions and evolutions of the Chuck-Will as it darts after its prey are so noiseless, so unimaginably quick it sometimes leaves its perch, captures an insect and returns with no apparent interruption to its mournful lament, not even a break between two notes.

They generally breed in April or May, in a thicket of palmetto and low undergrowth about three or four feet from the beaten path. The nest of this bird is no nest at all. We accidentally came upon one on the fourth of May. There were only two eggs—little beauties, nearly as large as small guinea eggs, of a creamy ground splotched all over with spots and dashes of purplish brown. They were on the bare ground without the slightest pretence of preparation or protection which, indeed, they would not need when the mother bird covered them, as her own mottled coloring would be undistinguishable from the dead leaf and twig covered earth.

The mother bird was not on the nest when we found it, perhaps had just slipped off with a purpose, as is their way. We heard her fluttering near by and thought her crippled or badly hurt.



COELIGENA CLEMENCIAE.



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JOHN LEWIS CHILDS, EDITOR

Plate IV. Nest and Eggs of the Blue-throated Hummingbird

(*Coeligena clemenciae*)

THIS nest with eggs of the Blue-throated Hummingbird (*Coligena clemenciae*) were taken by the late George F. Breninger, of Phoenix, Arizona, in the Huachuca Mountains, May 29, 1897. The female was taken on the nest and the skin preserved, making identity positive. Regarding the nest the data reads: "Nest composed of oak catkins, green moss and spiders' webs, built in a clump of Maidenhair Ferns which grew in the side of a wall of rock in a cut worn by water."

This plate was prepared over a year ago before Mr. Breninger's death, and he was to have furnished an article on the breeding of this rare Hummingbird, he having discovered its nest at three different times.

* * *

Eggs of the Carolina Paroquet

(*Conurus carolinensis*)

WE have now apparently an authentic set of the Carolina Paroquet taken wild. The set consists of three eggs which were taken on April 2, 1896, by Dr. H. E. Pendry. They were found in a cavity of a sycamore tree forty feet up on the outskirts of the Great Swamp near the head of the Caloosahatchee River and west of Lake Okechobee, De Soto County, Florida. Dr. Pendry was not sure of the identity of these eggs, as he saw no Paroquets at the nest, but they were in the swamp and he had frequently seen and taken young birds in the same locality. These eggs were called to our attention after the issue of the WARBLER containing the plate of eggs of the Carolina Paroquet laid in captivity. (Vol. I, No. 4.) The eggs were sent to us for identification, and there seems to be not the slightest doubt but that they are genuine. They measure as follows: 1.35×1.06 - 1.26×1.06 - 1.25×1.05 .

Mr. Joseph Grinnell is in no way responsible for the error in the scientific name of the Gray Flycatcher which appeared in his article on the breeding of that bird in our issue Vol. II, No. 2.

Ornithological Collection of John Lewis Childs, Floral Park, N. Y.

WE give a complete list of North American Birds, species and sub-species recognized by the A. O. U. Following the name of each bird is noted the mounted specimens, also eggs and nests in the collection of Mr. Childs, with abbreviated dates, (month), of take and locality.

M—indicates a male mounted specimen.

f — " female " "

y — " young " "

4 —or any other figure indicates a set of eggs of that number.

n-4 — " " " a nest and set of eggs.

1 Western Grebe
Aechmophorus occidentalis
 m Mont April
 6 ND June

2 Holboell's Grebe
Colymbus holboellii
 m ND June
 5 ND May

3 Horned Grebe
Colymbus auritus
 m Pa April
 5 Wis June

4 American Eared Grebe
Colymbus nigricollis californ.
 m ND June
 8 Neb "

5 St. Domingo Grebe
Colymbus dominicus brac.
 m Texas April
 5 Texas June

6 Pied-billed Grebe
Podilymbus podiceps
 m Fla Feb
 f and 3 young Kan May
 9 ND June n-5 Fla May

7 Loon
Gavia imber
 m N Y June
 2 N H "

8 Yellow-billed Loon
Gavia adamsii
 m Alaska June
 2 Mackenzie Bay "

9 Black-throated Loon
Gavia arctica
 m Sweden August
 2 Lapland June

10 Pacific Loon
Gavia pacifica
 m Alaska August
 2 Alaska June

11 Red-throated Loon
Gavia lumme
 m Brant Rock May
 2 Sweden June

12 Tufted Puffin
Lunda cirrhata
 m Alaska July
 1 Farallone Isl. May

13 Puffin
Fratercula arctica naumanni
 m Maine February
 1 (No data)

13a Large-billed Puffin
Fratercula arctica glacialis
 m Greenland June
 1 Iceland "

14 Horned Puffin
Fratercula corniculata
 m Alaska June
 1 (No data)

15 Rhinoceros Auklet
Cerorhinca monocerata
 f Alaska June
 1 Wash. July

16 Cassin's Auklet
Ptychoramphus aleuticus
 m Cal. March
 1 Cal. July

17 Paroquet Auklet
Cyclorrhynchus psittaculus
 m Cal.

18 Crested Auklet
Simorhynchus cristatellus
 m Alaska June
 1 Alaska "

19 Whiskered Auklet
Simorhynchus pygmaeus
 m Alaska June
 1 Alaska "

20 Least Auklet
Simorhynchus pusillus
 f Alaska June
 1 Bering Sea June

21 Ancient Murrelet
Synthliboramphus antiquus
 m Alaska April
 1 Iceland "

23 Marbled Murrelet
Brachyramphus marmoratus
 m B. C. Oct.
 f Cal. Aug.

24 Kittlitz's Murrelet
Brachyramphus kittlitzii
 m Nome June
 f Nome "

25 Xantus's Murrelet
Brachyramphus hypoleucus
 1 (No data)

26 Craveri's Murrelet
Brachyramphus craveri

27 Black Guillemot
Cephus grylle
 m New Brunswick Dec
 2 Labrador July

28 Mandt's Guillemot
Cephus mandtii
 m Labrador June
 2 Labrador "

29 Pigeon Guillemot
Cephus columba
 m Cal. Sept.
 2 Farallone Isl. June

30 Murre
Uria troile
 m N. B.
 1 Labrador June

30a California Murre
Uria troile californica
 f Cal. June
 1 Farallone Isl. June

31 Brunnich's Murre
Uria lomvia
 m Ont. Sept.
 1 Iceland June

31a Pallas's Murre
Uria lomvia arra
 m Alaska June
 1 Alaska "

32 Razor-billed Auk
Alca torda
 m N. B. Nov.
 1 Labrador July

33 Great Auk
Plautus impennis

34 Dovekie
Alle alle
 m N. J. Dec. f N. Y. Dec
 m and f Labrador June
 1 Greenland July

35 Skua
Megalestris skua
 m Shorehawk Nov.
 2 Fonia May

36 Pomarine Jaeger
Stercorarius pomarinus
 f Maine Oct.
 2 Iceland June

37 Parasitic Jaeger
Stercorarius parasiticus
 m (No data.)
 2 Iceland June

38 Long-tailed Jaeger
Stercorarius longicaudus
 f Alaska June
 2 Tornea "

39 Ivory Gull
Pagophila alba
 m and f Greenland Nov. (Spotted)
 m Alaska Aug.
 f " Feb.

40 Kittiwake
Rissa tridactyla
 m N. B. Nov.
 3 Labrador June

40a Pacific Kittiwake
Rissa tridactyla pollicaris
 f Alaska Aug.
 3 " June

41 Red-legged Kittiwake
Rissa brevirostris
 m Alaska June
 3 "

42 Glaucous Gull
Larus glaucus
 m N. B. Nov.
 3 Iceland June

42.1 Point Barrow Gull
Larus barrovianus
 f Alaska Sept.
 3 Arctic June

43 Iceland Gull
Larus leucopterus
 m Labrador Oct.
 3 Iceland June

44 Glaucous-winged Gull
Larus glaucescens
 m Cal. Feb.
 3 Alaska July

45 Kumlien's Gull
Larus kumtieni

46 Nelson's Gull
Larus nelsoni

47 Great Black-backed Gull
Larus marinus
 m (No data)
 3 N. S. May

48 Slaty-backed Gull
Larus schistisagus
 m Siberia June
 2 N. W. T. "

49 Western Gull
Larus occidentalis
 m Cal. Mch.
 3 Farallon Isl. June

[50] Siberian Gull
Larus affinis
 m Faroe Isl. June
 3 Russia May

51 Herring Gull
Larus argentatus
 m N. Y. Jan.
 3 Maine June

52 Vega Gull
Larus vegae
 m Kamtsk. May
 3 Asia Minor June

53 California Gull
Larus californicus
 m Cal. May
 5 Utah "

54 Ring-billed Gull
Larus delawarensis
 m N. D. April
 3 N. D. June
 n-3 Manitoba June

55 Short-billed Gull
Larus brachyrhynchus
 m Cal Nov.
 3 Alaska June

[56] Mew Gull
Larus canus
 m England Mch
 3 N. B. May

57 Heermann's Gull
Larus heermanni
 m Cal Dec.
 3 " Mch

58 Laughing Gull
Larus atricilla
 m Tex April
 4 La. May

59 Franklin's Gull
Larus franklinii
 m (No data)
 3 Minn. May

60 Bonaparte's Gull
Larus philadelphicus
 m Mass Nov.
 2 N. W. T. June

[60.1] Little Gull
Larus minutus
 m No Russia March
 3 Finland May

61 Ross's Gull
Rhodostethia rosea

62 Sabine's Gull
Xema sabini
 f Alaska Sept
 2 Arctic June

63 Gull-billed Tern
Gelochelidon nilotica.
 m Tex March
 3 Va. June

64 Caspian Tern
Sterna caspia
 m Tex March
 3 Grand Gull Isl. June

65 Royal Tern
Sterna maxima
 m Tex March
 4 S. C. June

66 Elegant Tern
Sterna elegans

67 Cabot's Tern
Sterna sandvicensis acuflavi
 m Tex May
 2 " April

[68] Trudeau's Tern
Sterna trudeaui
 m So Am Dec
 f "

69 Forster's Tern
Sterna fosteri
 m Tex Feb
 3 Lake Manitoba June

70 Common Tern
Sterna hirundo
 m N. J. July
 3 Maine "

71 Arctic Tern
Sterna paradisaea
 m Alaska July
 4 Maine June

72 Roseate Tern
Sterna dougalli
 m Neapeaque Harbor July
 3 Mass

73 Aleutian Tern
Sterna aleutica
 3 Alaska June

74 Least Tern
Sterna antillarum
 m Mass Aug
 4 Va. June
 n-2 Cal June

75 Sooty Tern
Sterna fuliginosa
 1 Bahamas June

[76] Bridled Tern
Sterna anæthetus
 m Bahamas May
 1 " June

77 Black Tern
Hydrochelidon nigra surinamensis
 m S. D. June
 3 Rice Lake May
 n-3 Man June

[78] White-winged Black Tern
Hydrochelidon leucoptera
 m Astrakan June
 f " "
 2 So Russia "

79 Noddy
Anous stolidus
 m West Indies
 1 (No data)

80 Black Skimmer
Rynchops nigra
 m S.C. June
 f " "
 4 " "
 N-4 " "
 81 Black-footed Albatross
Diomedea nigripes
 m Guadalupe June
 82 Short-tailed Albatross
Diomedea albatrus
 m Cal Feb
 1 Sonni Isl Oct
 82.1 Layson Albatross
Diomedea immutabilis
 1 New Zealand Dec
 [83] Yellow-nosed Albatross
Thalassogeran fuliginosus
 m Australia
 1 Cape Horn Feb
 84 Sooty Albatross
Phoebetria fuliginosa
 1 Desolation Isl So Am Feb
 [85] Giant Fulmar
Ossifraga gigantea
 m New Zealand Nov
 86 Fulmar
Fulmarus glacialis
 m St Kilda July
 f " June
 86b Pacific Fulmar
Fulmarus glacialis glupischa
 m St. Kilda July
 f Cal June
 86.1 Rodger's Fulmar
Fulmarus rodgersii
 1 Behring Sea June
 87 Slender-billed Fulmar
Priocella glacialisoides

88 Cory's Shearwater
Puffinus borealis
 m Alaska Sept
 89 Greater Shearwater
Puffinus major
 f Grand Banks Aug
 1 Iceland May
 90 Manx Shearwater
Puffinus puffinus
 m Scilly Isl Apr
 1 " May
 91 Pink-footed Shearwater
Puffinus creatopus
 m Cal Aug
 92 Audubon's Shearwater
Puffinus herminieri
 m Bahama May
 1 (No data)
 [92.1] Allied Shearwater
Puffinus assimilis
 m Porto Gauto Dec
 1 " Feb

93 Black-vented Shearwater
Puffinus gavia
 m Cal Oct
 1 Lower Cal Apr
 93.1 Townsend's Shearwater
Puffinus auricularis
 m Carion Isl Dec
 94 Sooty Shearwater
Puffinus fuliginosus
 m Mass May
 1 Labrador June
 95 Dark-bellied Shearwater
Puffinus griseus
 m Cal Aug
 1 NZ Dec
 96 Slender-billed Shearwater
Puffinus tenuirostris
 1 Kermadee Isl Dec
 96.1 Wedge-tailed Shearwater
Puffinus cuneatus
 1 NZ Nov
 96.2 New Zealand Shearwater
Puffinus bulleri

[97] Black-tailed Shearwater
Puffinus cinereus

[98] Black-capped Petrel
Astrelata basitata
 m New York Jan

[99] Scaled Petrel
Astrelata scalaris
 m New Zealand Feb
 f " June

100 Fisher's Petrel
Astrelata fisheri

101 Bulwer's Petrel
Bulweria bulweri
 m St Ursula Dec
 1 Conager Rocks June

102 Pintado Petrel
Daption capense
 m So Aust

103 Least Petrel
Halocyptena microsoma
 m Lower Cal
 1 " June

104 Stormy Petrel
Procellaria pelagica
 m St Kilda June
 1 Scotland "

105 Fork-tailed Petrel
Oceanodroma furcata
 m Alaska June
 1 " July

105.2 Kaeding Petrel
Oceanodroma kaedingi
 f Galapogus Isl Mch
 1 Wash July

106 Leach's Petrel
Oceanodroma leucorhoa
 m (No data)
 1 Maine June

106.1 Gaudalupe Petrel
Oceanodroma macrodactyla
 f Gaudalupe Mch
 1 "

106.2 Hawaiian Petrel
Oceanodroma cryptoleucura
 m Porto Gauto Oct
 1 " Sept

107 Black Petrel
Oceanodroma Melania
 m Cal July

108 Ashy Petrel
Oceanodroma homochroa
 f Cal Mch
 1 "

108.1 Socorro Petrel
Oceanodroma socorroensis
 m San Benito Isl July
 1 Lower Cal "

109 Wilson's Petrel
Oceanites oceanicus
 m Grand Banks Sept
 1 Indian Ocean Jan

[110] White-bellied Petrel
Fregetta grallaria

111 White-faced Petrel
Pelagodroma marina
 m NZ Sept
 1 "

112 Yellow-billed Tropic Bird
Phaethon americanus
 m Bahamas May

113 Red-billed Tropic Bird
Phaethon aethereus
 m Gallapogas Mch
 2 Gulf of Cal "

113.1 Red-tailed Tropic Bird
Phaethon rubricaudus
 m Mexico Dec
 1 " July

[114] Blue-faced Booby
Sula cyanops
 m Alegos Dec
 1 Mexico May

114.1 Blue-footed Booby
Sula dossi
 1 Kermedes Isl Dec

115 Booby
Sula sula
 m Bahamas Apr
 f Dominica May
 2 " Mch

115.1 Brewster's Booby
Sula brewsteri
 f 107 W Islands May
 1 L Cal "

[116] Red-footed Booby
Sula piscator
 m W Isl Jan
 1 (No data)

117 Gannet
Sula bassana
 m (No data)
 1 "

118 Anhinga
Anhinga anhinga
 m Fla June
 f and 2 young Fla June
 1 Texas June
 N-3 Fla May

119 Cormorant
Phalacrocorax carbo
 m Maine Mar
 4 Scotland May

120 Double-crested Cormorant
Phalacrocorax dilophus
 m N D Apr
 4 Manitoba May

120a Florida Cormorant
Phalacrocorax dilophus floridanus
 m Fla Feb
 m " June
 4 " Apr

120b White-crested Cormorant
Phalacrocorax dilophus cinctatus
 m Cal Nov
 8 NWT June

120c Farallone Cormorant
Phalacrocorax dilophus albociliatus
 4 Farallone Isl June

121 Mexican Cormorant
Phalacrocorax mexicanus
 f Mexico Mch
 4 (No data)

122 Brandt's Cormorant
Phalacrocorax penicillatus
 m Cal June
 4 " "
 N-5 "

123 Pelagic Cormorant
Phalacrocorax pelagicus
 m Alaska Mch
 3 Kamtschatka June

123a Violet-green Cormorant
Phalacrocorax pelagicus robustus
 m Alaska Mch
 2 June

123b Baird's Cormorant
Phalacrocorax pelagicus respondens
 m Cal Apr
 2 " June

124 Red-faced Cormorant
Phalacrocorax urile
 m Alaska June
 f " May

125 American White Pelican
Pelecanus erythrorhynchos
 m Fla Dec
 3 Nev May

126 Brown Pelican
Pelecanus occidentalis
 m f 2 young Fla June
 m Fla Feb
 4 " June
 N-3 Fla "

127 California Brown Pelican
Pelecanus californicus
 m Cal June
 3 Mexico Apr
 m Cal June

128 Man-o-War Bird
Fregata aquilla

m Fla May

1 Bahamas Apr

129 American Merganser
Merganser americanus

m Maine

f Mich Mch

9 N D Apr

N-12 Man June

130 Red-breasted Merganser
Merganser serrator

m N Y

f Fla Dec

9 Canada June

N-9 Alaska July

131 Hooded Merganser
Lophodytes cucullatus

m f Fla Nov

2 young Mich May

12 Minn May

N-8 Mont June

[131.1] Smew
Mergus albellus

m Europe Dec

6 Lapland June

132 Mallard
Anas boschas

m N Y Dec

f " Nov

16 Ill May

N-11 N D May

133 Black Duck
Anas obscura

m N Y Jan

f " Nov

8 O ut June

N-12 N S Apr

133a Red-legged Black Duck
Anas obscura rubripes

m Mo May

f " "

11 Mich "

134 Florida Duck
Anas fuiyigua

m Fla May

f " Feb

8 " Apr

N-10 " Mar

134a Mottled Duck
Anas fulvigula maculosa

m Texas Jan

f " Mch

N-9 " May

135 Gadwall
Chauliasmus streperus

m Fla Apr

f " Nov

9 N D June

N-9 N D June

136 Widgeon
Mareca penelope

m N Y

10 Lapland May

N-7 Iceland "

[137] Baldpate
Mareca americana

m Ariz Apr

f Mo Mch

10 N D May

N-10 N D June

[138] European Teal
Nettion crecca

m Avon River Feb

f " July

10 Iceland June

N-12 Holland Apr

139 Green-winged Teal
Nettion curvirostris

m f Fla Feb

8 N W T May

N-12 Minn May

140 Blue-winged Teal
Querquedula discors

m Mo

f Me

10 Colo May

N-8 N D June

141 Cinnamon Teal
Querquedula cyanoptera

m Cal

9 " May

N-8 Utah June

141.1 Ruddy Sheldrake
Casarca casarca

m Europe Apr

7 " May

142 Shoveller
Spatula clypeata

m N Y

f Fla Mch

Young Minn July

11 N W T June

N-9 N D May

143 Pintail
Dafila acuta

m N Y Jan

f Fla Nov

11 N D May

N-8 N D May

144 Wood Duck
Aix sponsa

m f Fla Dec

14 Del Apr

N-8 (No data)

[145] Rufous-crested Duck
Netta rufina

m Europe May

6 " Apr

146 Redhead
Aythya americana

m N Y Jan

f Wis Apr

16 N D June

N-16 N W T May

147 Canvas-back
Aythya valisneria

m N Y Oct

f Fla Jan

y Minn July

8 N D May

N-11 Alberta May

148 American Scaup Duck
Aythya marila

m N Y Jan

f Fla "

10 Alaska June

N-9 Alaska June

149 Lesser Scaup Duck
Aythya affinis

m Fla Mar

f " "

11 N D June

N-11 N D "

150 Ring-necked Duck
Aythya collaris
 m N Y Nov
 10 N W T July
 N-10 Alaska June

151 American Golden-eye
Clangula clangula amer.
 m Me Nov
 f 11 Mch
 10 N D June
 N-16 N D June

152 Barrow's Golden-eye
Glaucionetta islandica
 m B C Apr
 f 9 Iceland June
 N-4 Iceland June

153 Buffle-head
Charitonetta albeola
 m N Y Nov
 f Cal Apr
 y Alberta June
 N-10 Mont May

154 Old-squaw
Clangula hyemalis
 m N Y Nov
 10 Iceland June
 N-11 Greenland June

155 Harlequin Duck
Histrionicus histrionicus
 m Me Feb
 f " Nov
 12 Iceland June
 N-6 "

156 Labrador Duck
Camptolaimus labradorius
 m (No data)

157 Steller's Duck
Polypticta stelleri
 m Alaska June
 f " July
 y " June
 8 "

158 Spectacled Eider
Arctonetta fischi
 m Alaska June
 7 "

159 Northern Eider
Somateria mollissima bore.
 m N B Dec
 7 Greenland July
 N-6 England June

160 American Eider
Somateria dresseri
 m R I Mar
 5 Me May
 N-6 Labrador June

161 Pacific Eider
Somateria v-nigra
 m Alaska June
 5 "

162 King Eider
Somateria spectabilis
 m Newfoundland Feb
 f Alaska Sept
 4 Greenland June

163 American Scoter
Oidemia americana
 m Me Nov
 10 Alaska June
 N-7 "

[164] Velvet Scoter
Oidemia fusca
 m Europe Nov
 7 Baltic Sea June

165 White-winged Scoter
Oidemia deglandi
 m N Y Oct
 8 N D July
 N-9 " June

166 Surf Scoter
Oidemia perspicillata
 m N Y Nov
 f S C "

167 Ruddy Duck
Erismatura rubida
 m N Y Nov
 9 Colo July
 N-6 Utah June

[168] Masked Duck
Nomonyx dominicus
 m Costa Rica July
 f " Oct

169 Lesser Snow Goose
Chen hyperborea
 m Nebr Mar
 5 Alaska June

169a Greater Snow Goose
Chen hyperborea nivalis
 m Tex Nov
 6 Arctic June

169.1 Blue Goose
Chen caerulescens
 m Nebr Mar

170 Ross's Snow Goose
Chen rossii
 m N W T Oct

[171] White-fronted Goose
Anser albifrons
 m Russia Apr
 5 Greenland June

171a Am. White-fronted Goose
Anser albifrons gambeli
 m (No data)
 N-6 Alaska June

171.1 Bean Goose
Anser fabalis
 m Pomeraina Dec
 5 Lapland May

172 Canada Goose
Branta canadensis
 m Me Nov
 8 Iowa Apr
 N-6 Minn May

172a Hutchins' Goose
Branta canadensis hutchinsii
 m Neb Mar

172b White-cheeked Goose
Branta canadensis occident.

172c Cackling Goose
Branta canadensis minima
 m Cal Feb
 f "

173 Biant
Branta bernicla
 m N J Mar
 5 Arctic June

173a White-bellied Brant
Branta bernicla glaucoptera
 m Canada Apr
174 Black Brant
Branta nigricans
 m Cal Mar
 y Alaska June

[175] Barnacle Goose
Branta leucopsis

176 Emperor Goose
Philacte canagica
 m Alaska May
 6 " June

177 Black-bellied Tree Duck
Dendrocygna autumnalis
 m Tex July
 f " Jan
 10 " Aug

178 Fulvous Tree-duck
Dendrocygna fulva
 m Tex Feb
 f Cal June
 10 Tex June
 N-20 Cal June

[179] Whooping Swan
Olor cygnus
 m Europe Dec
 7 Iceland May

180 Whistling Swan
Olor columbianus
 m (No data)
 5 Arctic June

181 Trumpeter Swan
Olor buccinator
 m (No data)
 4 Alaska June

182 American Flamingo
Phoenicopterus ruber
 f W India
 y Cuba Nov
 i Bahama May

183 Roseate Spoonbill
Ajaja ajaja
 m Fla Nov
 f " Feb
 4 " May
 N-5 Fla Mar

184 White Ibis
Guara alba
 m Fla
 3 " Mar
 N-4 " "

[185] Scarlet Ibis
Guara rubra
 m Central Am
 f " "
 4 " "

186 Glossy Ibis
Plegadis autumnalis
 m La Apr
 f " Nov
 5 Fla May

187 White-faced Glossy Ibis
Plegadis guarauna
 m Tex Apr
 f " "
 5 " "

188 Wood Ibis
Tantalus loculator
 m (No data)
 3 Fla May

[189] Jabiru
Mycteria americana

190 American Bittern
Botaurus lentiginosus
 m N J Sept
 6 N Y June

191 Least Bittern
Ardetta exilis
 m Fla May
 f " "
 5 N Y "
 N-3 Fla "

191.1 Cory's Least Bittern
Ardetta neoxena
 m Mich May
 4 Fla Apr

192 Great White Heron
Ardea occidentalis
 m Fla Feb

194 Great Blue Heron
Ardea herodias
 m Me Apr
 5 Colo May

194a Northwest Coast Heron
Ardea herodias fannini

194b Ward's Heron
Ardea herodias wardi
 m Fla Feb

195 European Blue Heron
Ardea cinerea
 m Ireland May
 6 " Apr

196 American Egret
Herodias Egretta
 m Fla Apr
 f " "
 5 " Feb

197 Snowy Heron
Egretta candidissima
 m Fla Mar

198 Reddish Egret
Dichromonassa rufescens
 m Fla Feb
 f " Aug
 4 Tex May

199 Louisiana Heron
Hydranassa tricolor ruficollis
 m Fla Feb
 4 " May

200 Little Blue Heron
Florida cœrulea
 m f Fla Apr Adult
 m f " Sept Young
 5 La Apr

201 Green Heron
Butorides virescens
 m N.Y. July
 5 " May
 N-6 Cal Apr

201a Frazar's Green Heron
Butorides virescens frazari

201b Anthony's Green Heron
Butorides virescens anthonyi
 m Cal Apr
 4 " May
 N-4 Ariz June

202 Black-crowned Night Heron
Nycticorax nycticorax nævius
 m N.Y. July
 5 Minn May
 N-5 N.Y. June

203 Yellow-crowned Night Heron
Nyctanassa violacea
 m Fla
 4 " May

204 Whooping Crane
Grus americana
 m Nebr Mar
 f 2 Iowa May

205 Little Brown Crane
Grus canadensis
 2 Tex Feb
 2 Alaska June

206 Sandhill Crane
Grus mexicana
 m Fla Nov
 2 " Feb
 N-2 " Mar

207 Limpkin
Aramus giganteus
 m Fla Mar
 7 " "
 N-5 " "

208 King Rail
Rallus elegans
 m Fla
 13 Ont May

209 Belding's Rail
Rallus beldingi

210 California Clapper Rail
Rallus obsoletus
 m Cal Nov
 11 " May

211 Clapper Rail
Rallus crepitans
 m Fla
 10 N.J. June
 N-10 " "

211a Louisiana Clapper Rail
Rallus crepitans saturatus
 m La May
 12 " "

211b Scott's Rail
Rallus crepitans scottii
 m Fla Oct
 N-5 " June

211c Waynes Clapper Rail
Rallus crepitans waynei
 m f S.C. Oct
 12 " Apr
 N-11 " "

211.2 Caribbean Clapper Rail
Rallus longirostris caribæus
 6 Jamaica June

212 Virginia Rail
Rallus virginianus
 m N.Y. Sept
 f Mo.
 13 N.Y. May
 N-11 N.Y. June

[213] Spotted Crake
Porzana porzana
 m Europe Apr
 6 Holland June

214 Sora
Porzana carolinæ
 m Fla May
 14 N.Y. June
 N-11 N.W.T. June

215 Yellow Rail
Porzana noveboracensis
 m Cal Apr
 f Me. Oct
 N-10 N.D. June

216 Black Rail
Porzana jamaicensis
 m S.C. June
 f 7 Cal Apr
 N-8 S.C. June

[217] Corn Crake
Crex crex
 m England Feb
 10 " May
 N-10 Ireland "

218 Purple Gallinule
Ionoris martinica
 m Fla
 28 Tex May

219 Florida Gallinule
Gallinula galeata
 m Fla May
 9 Minn June

[220] European Coot
Fulica atra
 m Europe May
 10 (No data)

221 American Coot
Fulica americana
 m N.Y. Nov
 f Cal June
 11 Minn May

222 Red Phalarope
Crymophilus fulicarius
 m Mass May
 f " "
 4 Iceland June

223 Northern Phalarope
Phalaropus lobatus
 m Cal May
 f Minn
 4 Greenland June
 N-3 N W T June

224 Wilson's Phalarope
Phalaropus tricolor
 m N D May
 f " "
 4 N W T June
 N-4 N D June

225 American Avocet
Recurvirostra americana
 m N W T June
 4 Cal June

226 Black-necked Stilt
Himantopus mexicanus
 m Fla May
 4 Cal "

[227] European Woodcock
Scolopax rusticola
 m Europe Dec
 4 Lapland May

228 American Woodcock
Philohela minor
 m S C Dec
 f N J Jan
 4 y N J Apr
 y Mich May
 4 Pa Apr
 N-4 N C Mar

[229] European Snipe
Gallinago gallinago
 m Europe June
 4 " Apr

230 Wilson's Snipe
Gallinago delicata
 m N B Apr
 f Fla Dec
 4 Utah May
 N-4 Utah May

[230.1] Greater Snipe
Gallinago major
 m Sarapaa Apr
 4 Lapland May

231 Dowitcher
Macrorhamphus griseus
 m N J Aug
 4 Arctic June

232 Long-billed Dowitcher
Macrorhamphus scolopaceus
 m N D May
 f " "
 4 Alaska June

233 Stilt Sandpiper
Micropalama himantopus
 m Alberta

234 Knot
Tringa canutus
 m S C May
 f " "

235 Purple Sandpiper
Arquatella maritima
 m Me Oct
 4 Greenland June

236 Aleutian Sandpiper
Arquatella couesi
 m Alaska June

237 Pribilof Sandpiper
Arquatella ptilocnemis

238 Sharp-tailed Sandpiper
Actodromas accuminata
 m China May

239 Pectoral Sandpiper
Actodromas maculata
 m N J Aug
 4 Alaska June

240 White-rumped Sandpiper
Actodromas fuscicollis
 m Ont May

241 Baird's Sandpiper
Actodromas bairdii
 m B C Aug
 4 Arctic June

242 Least Sandpiper
Actodromas minutilla
 m Fla
 8 (No data)

[242.1] Long-toed Stint
Actodromas damacensis
 4 (No data)

[243] Dunlin
Pelidna alpina
 m Europe
 4 Iceland May

243a Red-back Sandpiper
Pelidna alpina sakhalina
 m Fla
 y Alaska July
 3 "

244 Curlew Sandpiper
Erolia ferruginea
 m N J July
 4 Sweden June

[245] Spoon-bill Sandpiper
Eurynorhynchus pygmæus
 m Japan Sept

246 Semipalmated Sandpiper
Ereunetes pusillus
 m N J July
 f " "
 3 Arctic July

247 Western Sandpiper
Ereunetes occidentalis
 m Cal June

248 Sanderling
Calidris arenaria
 m N J July
 f Fla May
 m S C "
 3 Alaska June

249 Marbled Godwit
Limosa fedoa
 m N D May
 f " "
 4 Iowa "

250 Pacific Godwit
Limosa lapponica baueri
 4 Alaska June

251 Hudsonian Godwit
Limosa haemastica
 m N D May
 4 Alaska June

[252] Black-tailed Godwit
Limosa limosa
 m Sweden July
 f 4 Iceland May

[253] Green-shank
Totanus nebularius
 m Lapland May
 4 June

254 Greater Yellow-legs
Totanus melanoleucus
 m Fla. Feb
 4 Alberta June

255 Yellow-legs
Totanus flavipes
 m N J Aug
 4 Iceland May

256 Solitary Sandpiper
Totanus solitarius
 m N Y Aug
 f
 m N J "
 f N-4 N W T June

256a West. Solitary Sandpiper
Totanus solitarius cinnamomeus
 m B C Aug

[257] Green Sandpiper
Totanus ochropus
 m Scotland May
 4 Sweden "

258 Willet
Sympheeria semipalmata
 m S C Apr
 4 Va June

258a Western Willet
Sympheeria semipalmata inornata
 m N. Mex Mar
 3 N W T June
 N-4 Utah "

259 Wandering Tattler
Heteractitis ineanus
 m Cal

[260] Ruff
Pavoncella pugna
 m England June
 f 4 Denmark May

261 Bartramian Sandpiper
Bartramia longicauda
 m Tex Mar
 f " Apr
 4 Pa May

262 Buff-breasted Sandpiper
Tryngites subruficollis
 m Tex Aug
 4 Alaska June

263 Spotted Sandpiper
Actitis macularia
 m Fla. Feb
 f N Y Apr
 4 Ont May
 N-3 N Y June

264 Long-billed Curlew
Numenius longirostris
 m Tex June
 f 4 Mont May
 N-4 Utah "

265 Hudsonian Curlew
Numenius hudsonicus
 m N J Aug
 m S C May
 f 4 Alaska June

266 Eskimo Curlew
Numenius borealis
 m 1899

[267] Whimbrel
Numenius phaeopus
 m Europe
 4 Iceland June

[268] Bristle-thighed Curlew
Numenius tahitiensis

[269] Lapwing
Vanellus vanellus
 m N Y Dec
 4 Europe May

269.1 Dotterel
Eudromias morinellus
 m Europe Jan
 4 Lapland June

270 Black-bellied Plover
Charadrius squatarola
 m N J Sept
 f S C May
 m 2 Arctic July

[271] Golden Plover
Charadrius apricarius
 m Europe Jan
 4 Iceland June

272 American Golden Plover
Charadrius dominicus
 m Man May
 3 Arctic July

272a Pacific Golden Plover
Charadrius dominicus fulvus
 m Amurland Sept
 f " "
 4 Alaska June

273 Kildeer
Aegialitis vocifera
 m Fla. Feb
 y Ind May
 4 Ct "

274 Semipalmated Plover
Aegialitis semipalmata
 m Fla. May
 4 Labrador June

275 Ring Plover
Aegialitis biaxicula
 m England May

[276] Little Ring Plover
Aegialitis dubia
 m (No data)
 m Bohemia Apr

The Warbler

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277 Piping Plover
Egialitis meloda
 m Mass May
 4 N.J. "

277a Belted Piping Plover
Egialitis meloda circumcincta
 m S.C. May
 f " June
 4 N.D. June

278 Snowy Plover
Egialitis nivosa
 m Fla Sept
 3 Cal June
 N.3 " May

[279] Mongolian Plover
Egialitis mongola
 m Ceylon Nov
 f Oct
 3 Turkestan May

280 Wilson's Plover
Ochthodromus wilsoni
 m Fla Feb
 f S.C. May
 3 Fla Apr

281 Mountain Plover
Podasocys montana
 m Cal May
 f Ariz. Nov
 3 Cal May

282 Surf Bird
Aphriza virgata
 m Oreg Apr

283 Turnstone
Arenaria interpres
 m Europe Jan
 f " May
 3 Arctic July

283.1 Ruddy Turnstone
Arenaria morinella
 m S.C. May
 f " "
 4 Alaska June

284 Black Turnstone
Arenaria melanocephala
 m (No data)

[285] Oyster-catcher
Haematopus ostralegus
 m Europe June
 4 " May

286 American Oyster-catcher
Haematopus palliatus
 m S.C. May
 2 Va. " June
 3 Va. May

286.1 Frazar's Oyster-catcher
Haematopus frazari
 m Sun Roque Isl. June
 1 Lower Cal June

287 Black Oyster-catcher
Haematopus bachmani
 m Cal
 3 Gulf of Georgia June

[288] Mexican Jacana
Jacana spinosa
 m (No data)
 5 Mexico May

289 Bob-white
Colinus virginianus
 m N.Y. Nov
 f S.C. Dec
 21 Pa. June

289a Florida Bob-white
Colinus virginianus floridanus
 m Fla. Feb
 f " "
 17 " May

289b Texan Bob-white
Colinus virginianus texanus
 m Tex. Mar
 f " "
 16 " June

291 Masked Bob-white
Colinus ridgwayi

292 Mountain Partridge
Oreortyx pictus
 m Oreg Dec
 f " "
 13 " June
 N.9 Cal "

292a Plumed Partridge
Oreortyx pictus plumiferus
 m Cal Apr
 22 " June
 N.11 Cal "

292b San Pedro Partridge
Oreortyx pictus confinis
 m San Pedro Mts May

293 Scaled Partridge
Callipepla squamata
 m Ariz. Apr
 f " "
 14 Tex May

293a Chestnut-bellied S'l'd Par.
Callipepla squamata castanogastris
 m Tex Feb
 f " "
 22 Mexico Feb

294 California Partridge
Callipepla californica
 m Cal Dec
 f " "
 24 " Apr
 N.13 " June

294a Valley Partridge
Callipepla californica vallicola
 m Cal Apr
 f " "
 14 " "

295 Gambel's Partridge
Callipepla gambelii
 m Ariz Nov
 f " "
 16 " Apr

296 Massena Partridge
Cyrtonyx montezumae
 m Ariz. May
 f " "
 15 " July
 N.13 Ariz June

297 Dusky Grouse
Dendragapus obscurus
 m Utah
 12 " June

297a Sooty Grouse
Dendragapus obscurus fuliginosus
 m Wash May
 9 Oreg Apr

297b Richardson's Grouse
Dendragapus richardsonii
 m N W T Apr
 f Wyo "
 5 Alberta "
 298 Hudsonian Spruce Grouse
Canachites canadensis
 m Labrador Feb

298b Alaskan Spruce Grouse
Canachites canadensis osgoodi
 m Alaska Apr
 f "

298c Canadian Spruce Grouse
Canachites canadensis canace
 m (No data)
 15 Nova Scotia June

299 Franklin's Grouse
Dendragapus franklinii
 m N W T Feb
 f "
 y Mont July
 7 N W T June

300 Ruffed Grouse
Bonasa umbellus
 m Me Oct
 19 Ct May
 N-12 Mass May

300a Canadian Ruffed Grouse
Bonasa umbellus togata
 m Winnipeg Feb
 10 Nova Scotia May

300b Gray Ruffed Grouse
Bonasa umbellus umbelloides
 m N W T Apr
 9 Idaho May

300c Oregon Ruffed Grouse
Bonasa umbellus sabini
 m Oreg Jan
 9 " June

301 Willow Ptarmigan
Lagopus lagopus
 m Alberta Dec
 f "
 m Winter y Colo Sept
 13 Alaska June

301a Allen's Ptarmigan
Lagopus lagopus allenii
 m Nfld Mar
 10 " June

302 Rock Ptarmigan
Lagopus rupestris
 m Nfld
 6 Labrador May

302a Reinhardt's Ptarmigan
Lagopus rupestris reinhardti
 m Labrador Feb
 11 Iceland July

302b Nelson's Ptarmigan
Lagopus rupestris nelsoni

302c Turner's Ptarmigan
Lagopus rupestris atkhensis
 m Alaska

302d Townsend's Ptarmigan
Lagopus rupestris townsendi

302.1 Evermann's Ptarmigan
Lagopus evermanni

303 Welch's Ptarmigan
Lagopus weichi
 m Nfld Mar
 10 " June

304 White-tailed Ptarmigan
Lagopus leucurus
 m N W T Feb
 7 Alaska June

304a So. White-tail Ptarmigan
Lagopus leucurus altipetens
 m Colo Jan
 m " July
 f "

305 Prairie Hen
Tympanuchus americanus
 m Ill
 f Canada May
 m Nebr Oct
 14 Ill June

305a Atwater's Prairie Hen
Tympanuchus americanus att
 m Tex Feb
 f "

306 Heath Hen
Tympanuchus cupido
 m Mass Dec
 f "
 1 " Sept

307 Lesser Prairie Hen
Tympanuchus pallidicinctus
 m Okla May
 f "
 10 " May

308 Sharp-tailed Grouse
Pediocætes phasianellus
 m N W T
 13 Alaska June

308a Colu. Sharp-tailed Grouse
Pediocætes phasianellus columbianus
 m N W T Nov
 f "
 11 Mont May

308b Prairie Sharp-tailed Gr'se
Pediocætes phasianellus campestris
 m N D Dec
 16 May

309 Sage Grouse
Centrocercus urophasianus
 m Mont
 9 Wyo May

310 Wild Turkey
Meleagris gallopavo silvestris
 f S C Jan
 15 " May
 N-12 Ga May

310a Merriam Wild Turkey
M. g. merriami
 9 Ariz June

310b Florida Wild Turkey
Meleagris gallopavo osceola
 m Fla Mar
 9 " Apr

310c Rio Grande Turkey
M. g. intermedia
 m Tex Jan
 f " "
 13 Mex. June

311 Chachalaca
Ortalidis vetula macallii
 m Tex Apr
 4 Mex May

312 Band-tailed Pigeon
Columba fasciata
 m Cal Nov
 2 Oreg June

312a Viosca's Pigeon
Columba fasciata vioscae
 m L Cal July
 f "

313 Red-billed Pigeon
Columba flavirostris
 m Ariz June
 2 Tex "

314 White-crowned Pigeon
Columba leucocephala
 m Fla Sept
 2 Bahama June

314.1 W.I. White-crown'd Pigeon
Columba squamosa
 m Cuba Feb
 f " Dec
 2 W.I. June
 N-2 May

315 Passenger Pigeon
Ectopistes migratorius
 m Vt Apr
 m Mich May
 f " "
 m " "
 y f Me Aug
 2 Ind Ter May

316 Mourning Dove
Zenaidura macroura
 m Fla Feb
 2 Kan May
 N-2 Cal "

317 Zenaida Dove
Zenaidura zenaida
 m Cuba Jan
 f " Feb
 1 Jamaica July

318 White-fronted Dove
Leptotila fulviventris brach
 m Tex Mar
 2 " May

319 White-winged Dove
Melopelia leucoptera
 m Ariz May
 f " "
 2 Tex "
 N-2 Ariz "

320 Ground Dove
Columbigallina passerina tstrrestris
 m Fla Feb
 f " "
 2 " May
 N-2 "

320a Mexican Ground Dove
Columbigallina passerina pallescens
 m Tex Mar
 f Ariz May
 2 Mex June

320b Bermuda Ground Dove
Columbigallina passerina bermudina

321 Inca Dove
Scardafella inca
 m Ariz
 2 Ariz May

[322] Key West Quail-dove
Geotrygon martinica
 m Cuba Feb
 f " "
 2 Bahama May
 N-2 Cuba Apr

[322.1] Ruddy Quail-dove
Geotrygon montana
 m Cuba Jan
 f " Dec
 2 " May
 N-2 Dominica May

[323] Blue-headed Quail-dove
Starnenas cyanocephala
 m Cuba Feb
 f " "
 2 " Apr

324 California Vulture
Gymnogyps californianus
 m Cal Nov
 f " "
 1 " Apr

325 Turkey Vulture
Cathartes aura
 m Fla "
 f " "
 2-y " May
 2 Kan Apr

326 Black Vulture
Cathartista atrata
 m Fla Jan
 f " Feb
 2-y " "
 2 Tex Feb

327 Swallow-tailed Kite
Elanoides forficatus
 m Fla Apr
 f " "
 2 Tex May
 N-2 Fla Apr

328 White-tailed Kite
Elanus leucurus
 m Fla
 5 Cal Apr
 N-4 Fla "

329 Mississippi Kite
Ictinia mississippiensis
 m Tex June
 2 " "
 N-2 Okla "

330 Everglade Kite
Rostrhamus sociabilis
 m Fla
 f " "
 3 " Apr
 N-4 "

331 Marsh Hawk
Circus hudsonius
 m Me Nov
 f Fla "
 5 Ct May
 N-6 "

332 Sharp-shinned Hawk
Accipiter velox
 m Oreg
 f " "
 6 N.C. May
 N-7 Ont "
 333 Cooper's Hawk
Accipiter cooperi
 m Wis Oct
 6 Iowa May
 N-5 Conn "
 334 American Goshawk
Accipiter atricapillus
 m Me
 3 N.S. May
 334a Western Goshawk
Accipiter atricapillus striatulus
 m B.C. Feb
 3 Alaska May
 335 Harris's Hawk
Parabuteo unicinctus harrisi
 m Tex Oct
 3 " Mch
 [336] European Buzzard
Buteo buteo
 m Europe June
 3 " Mch
 337 Red-tailed Hawk
Buteo borealis
 m Miss Feb
 f Pa. "
 y N.Y. May
 m-Black-Ariz. Feb
 5 Mass Apr
 N-3 Mich "
 337a Krider's Hawk
Buteo borealis krideri
 m Wis May
 3 Minn Mch
 337b Western Red-tail
Buteo borealis calurus
 m (No data)
 3 Cal Mch
 337d Harlan's Hawk
Buteo borealis harlani
 f Ill Oct
 2 La Mch
 339 Red-shouldered Hawk
Buteo lineatus
 m (No data)
 5 Mich Apr
 N-4 N.Y. May
 339a Fla. Red-shouldered Hawk
Buteo lineatus allenii
 f Fla Nov
 3 Tex May
 339b Red-bellied Hawk
Buteo lineatus elegans
 m Colo Apr
 4 Cal Mch
 340 Zone-tailed Hawk
Buteo abbreviatus
 m N.M. May
 f Ariz. "
 2 341 White-tailed Hawk
Buteo albicaudatus sennetti
 m Tex May
 3 " Apr

342 Swainson's Hawk
Buteo swainsoni
 m Colo Apr
 4 Idaho May
 343 Broad-winged Hawk
Buteo platypterus
 m (No data)
 3 N.H. May
 N-3 Conn "
 344 Short-tailed Hawk
Buteo brachyurus
 m Mex Apr
 345 Mexican Black Hawk
Urubitinga anthracina
 m Mex May
 2 " Apr
 346 Mexican Goshawk
Asturina plagiata
 m Mex Apr
 3 Tex May
 [347] Rough-legged Hawk
Archibuteo lagopus
 m Europe Jan
 f " "
 4 Sweden Feb
 347a Am. Rough-legged Hawk
Archibuteo lagopus sancti-johannis
 m N.Y.
 f " "
 m (Dark) N.J. Nov
 4 Labrador June
 348 Ferruginous Rough-leg
Archibuteo ferrugineus
 m N Mex June
 5 N.D. May
 349 Golden Eagle
Aquila chrysaetos
 m Colo Jan
 f " "
 3 Tex Apr
 2 Cal Feb
 [350] Harpy Eagle
Thrasaetus harpyia

[351] Gray Sea Eagle
Haliæetus albicilla
 m Iceland Aug
 3 Russia Mch
 352 Bald Eagle
Haliæetus leucocephalus
 m Fla Feb
 f " "
 2-y " "
 2 La "
 N-2 Fla Nov
 352a Northern Bald Eagle
Haliæetus leucocephalus alascanus
 m Oreg " Mch
 2 " "
 353 White Gyrfalcon
Falco islandus
 m Greenland Feb "
 f " "
 4 Iceland June
 354 Gray Gyrfalcon
Falco rusticolus
 m Greenland Feb "
 f " Nov
 2 Husavick May

354a Gyrfalcon
Falco rusticolus gyrfalco
 m Greenland Apr
 f " May
 4 Denmark Apr

354b Black Gyrfalcon
Falco rusticulus obsoletus
 * Labrador May

355 Prairie Falcon
Falco mexicanus
 m N W T Sept
 5 Cal Apr

356 Duck Hawk
Falco peregrinus anatum
 m Tex Jan
 f N Y " "
 4 Cal Apr
 N-4 N J Apr

356a Peale's Falcon
Falco peregrinus pealei
 4 Kamchatka June

357 Pigeon Hawk
Falco columbarius
 m N J Aug
 5 Labrador

357a Black Merlin
Falco columbarius suckleyi
 m Alaska Aug
 5 N W T May

358 Richardson's Merlin
Falco richardsonii
 m N W T June
 f " "
 5 " "
 N-4 " "

[358.1] Merlin
Falco regulus
 4 June

359 Aploimado Falcon
Falco fusco-ceruleoescens
 m Tex Dec
 4 " Apr
 N-4 " "

[359.1] Kestrel
Falco tinnunculus
 m Eng Dec
 5 (No data)

360 American Sparrow Hawk
Falco sparverius
 m Me
 f Mont
 5 Pa May

360a Desert Sparrow Hawk
Falco sparverius phaloma
 m Ariz
 7 N W T June

360b St. Lucas Sparrow Hawk
Falco sparverius peninsularis
 m L Cal June

[361] Cuban Sparrow Hawk
Falco dominicensis
 m W Indies June
 f " "
 3 Fla " "

362 Audubon's Caracara
Polyborus cheriway
 m Fla
 3 Tex Apr

363 Gaudalupe Caracara
Polyborus lutosus
 m Guadalupe Dec
 2 L Cal June

364 American Osprey
Pandion haliaetus carolinensis
 m Fla Apr
 4 N J May

365 American Barn Owl
Strix pratincola
 m Fla Mich
 10 Cal Apr

366 American Long-eared Owl
Asio wilsonianus
 m N Y Dec
 6 Iowa Apr

367 Short-eared Owl
Asio accipitrinus
 m Me
 17 Iowa May

368 Barred Owl
Syrnium varium
 m Mass
 4 Mich Mich

368a Florida Barred Owl
Syrnium varium allenii
 m Fla Feb
 2 " "
 368b Texas Barred Owl
Syrnium nebulosum helvolum
 f Tex Oct
 2 " Apr

369 Spotted Owl
Syrnium occidentale
 m N Mex
 2 Ariz May

369a Northern Spotted Owl
Syrnium occidentale caurinum
 4 Cal Apr

370 Great Gray Owl
Scotiaptex nebulosa
 m Canada
 f Me Nov
 2 Arctic May

[370a] Lapp Owl
Scotiaptex nebulosa lapponica
 m Lapland Apr
 5 June

371 Richardson's Owl
Cryptoglaux tengmalmi richardsoni
 m Me
 4 Sweden May

372 Saw-whet Owl
Crypaeoglaux acadia
 m Canada
 f Minn May
 4 N H June
 N-7 Minn May

372a Northern Saw-whet Owl
N. a. scotaea
 f B C May

373 Screech Owl
Megascops asio
 m Me
 f N Y Dec
 4 Iowa Apr

373a Florida Screech Owl
Megascops asio floridanus
 m Fla June
 3 " Apr

373b Texan Screech Owl
Megascops asio megalotis
 m Tex Apr
 6 " "

373c California Screech Owl
Megascops asio bendirei
 m Cal Nov
 6 " Apr

373d Kennicott's Screech Owl
Megascops asio kennicottii
 m B C
 5 Oreg Apr

373e Rocky Mt. Screech Owl
Megascops asio maxwelliae
 m Colo Feb
 4 " Apr

373f Mexican Screech Owl
Megascops asio cinereus
 m Ariz Apr

373g Aiken's Screech Owl
Megascops asio aikenii
 3 Colo Apr

373h MacFarlane's Screech Owl
Megascops asio macfarlanei
 m B C Jan
 3 Wash May

373.i Huachuca Screech Owl
Megascops trichopsis
 m Ariz May
 4 Ariz Apr

373.2 Xanthus Screech Owl
Megascops xanthus

374 Flammulated Screech Owl
Megascops flammeola
 m Ariz May
 3 Colo "

374a Dwarf Screech Owl
Megascops flammeola idahoensis

375 Great Horned Owl
Bubo virginianus
 m N Y Dec
 f " "
 3 Iowa Feb

375a Western Horned Owl
Bubo virginianus pallescens
 m Ariz
 3 Tex Mex

375b Arctic Horned Owl
Bubo virginianus arcticus
 m N W T Mar
 2 Alaska May

375c Dusky Horned Owl
Bubo virginianus saturatus
 m B C Oct
 2 Cal Apr

375d Pacific Horned Owl
Bubo virg. pacificus
 f Cal Apr
 5 " Feb

375e Dwarf Horned Owl
Bubo virginianus elachistris

376 Snowy Owl
Nyctea nyctea
 m f Me Nov
 m (White) Canada
 6 Lapland May

[377] Hawk Owl
Surnia ulula
 m St. Pemeria Sept
 9 Lapland May

377a American Hawk Owl
Surnia ulula caparoch
 m Me
 6 Labrador June

378 Burrowing Owl
Speotyto cunicularia hypogaea
 m Ariz
 9 Cal Apr

378a Florida Burrowing Owl
Speotyto cunicularia floridana
 m Fla Apr

379 Pygmy Owl
Glaucidium gnoma
 m B C Apr
 3 Ariz May

379a California Pygmy Owl
Glaucidium gnoma californicum
 m Oreg Nov
 6 Cal Apr

379.i Hoskin's Pygmy Owl
Glaucidium hoskinsii

380 Ferruginous Pygmy Owl
Glaucidium phalaenoides
 m Ariz
 f " May

381 Elf Owl
Micropallus whitneyi
 m Ariz Apr
 4 " May

382 Carolina Paroquet
Conurus carolinensis
 m Fla Feb
 f " "
 3 D C July in Confinement
 3 Fla Apr

382.i Thick-billed Parrot
Rhynchositta pachyrhyncha
 m Ariz June
 4 Mex May

[383] Ani
Crotophaga ani
 m S A
 5 Jamaica Sept

384 Groove-billed Ani
Crotophaga sulcirostris
m May
5 Mex May

385 Road Runner
Geococcyx californianus
m Ariz Dec
4 Cal Apr

386 Mangrove Cuckoo
Coccyzus minor
m Dominica Jan
f 3 Cuba June

[386a] Maynard's Cuckoo
Coccyzus minor maynardi
m Fla June
3 " May

387 Yellow-billed Cuckoo
Coccyzus americanus
m N Y July
5 La June
N-2 N Y May

387a California Cuckoo
Coccyzus americanus occidentalis
m Cal July
5 " " July

388 Black-billed Cuckoo
Coccyzus erythrophthalmus
m N Y July
5 Mich May
N-3 Mass June

388.1 Kamchatkan Cuckoo
Cuculus canorus telephonus

[389] Coppery-tailed Trogon
Trogon ambiguus
m Mex Apr
f " "
4 " "

390 Belted Kingfisher
Ceryle alecyon
m N Y Conn May
7 " "

390.1 Ringed Kingfisher
Ceryle torquata
m Jan

391 Texan Kingfisher
Ceryle cabansi
m Tex Apr
1 Panama June
5 Tex Apr

392 Ivory-billed Woodpecker
Campetherus principalis
m f Fla Feb
m 2 f " "
2 " "
N-2 " " Mech

393 Hairy Woodpecker
Dryobates villosus
m Ill May
5 Ind May
N-5 Ct "

393a North. Hairy Woodpecker
Dryobates villosus leucomelus
m Ont Mar
f B C June
7 Alberta "

393b South. Hairy Woodpecker
Dryobates villosus audubonii
m Fla Apr
4 Tex Apr

393c Harris's Woodpecker
Dryobates villosus harrisi
m N M Apr
4 Oreg May

393d Cabanis's Woodpecker
Dryobates villosus hyloscopus
m Cal Dec
4 Colo Aug

393e Rocky Mt. Hairy Woodp'k'r
Dryobates villosus monticola
m Colo Jan
f " Mech

393f Queen Charlotte Woodp'k'r
Dryobates villosus picoidens

394 Southern Downy Woodp'k'r
Dryobates pubescens
m Fla Feb
f 6 June

394a Gairdner's Woodpecker
Dryobates pubescens gairdneri
m Cal Apr
6 " "
N-3 " "

394b Batachelder's Woodpecker
Dryobates pubescens oreocucus
4 Cal May

394c Downy Woodpecker
Dryobates pubescens medianus
m Me Feb
6 Ill May
4 Ct "

394d Nelson's Downy Woodp'k'r
Dryobates pubescens nelsoni
f Ont Apr

394e Willow Woodpecker
Dryobates pubescens turatii
m Cal Oct
f " Apr

395 Red-cockaded Woodpecker
Dryobates borealis
m Fla Feb
5 S C May

396 Baird's Woodpecker
Dryobates scalaris bairdi
m Ariz Nov
5 Tex Apr
4 Ariz May

396a Saint Lucas Woodpecker
Dryobates scalaris lucasanus
m St. Lucas "

397 Nuttall's Woodpecker
Dryobates nuttallii
m Jan
6 May

398 Arizona Woodpecker
Dryobates arizonæ
m Ariz June
N-4 " May

The Warbler

399 White-headed Woodpecker
Xenopicus albolarvatus
 m Cal June
 4 " " June
 N-5 " "
 400 Arctic Three-toed W'dp'k
Picoides arcticus
 m Wis Dec
 4 Ont May
 401 Am. three-toed Woodpecker
Picoides americanus
 m (No data)
 5 Labrador May
 401a Alask. Three-toed W'dp'k
Picoides americanus fasc.
 m Alaska May
 401b Alpine Three-toed Wo'dp'k
Picoides americanus dorsalis
 m Alberta May
 4 " "
 402 Yellow-bellied Sapsucker
Sphyrapicus varius
 m N Y May
 5 Mich May
 402a Red-naped Sapsucker
Sphyrapicus varius nuchalis
 m Ariz Nov
 4 Colo May
 403 Red-breasted Sapsucker
Sphyrapicus ruber
 m (No data)
 4 Oreg May
 403a Northern Red-br. Sapsucker
Sphyrapicus ruber notkensis
 m Oreg Mich
 f " Apr
 404 Williamson's Sapsucker
Sphyrapicus thyroideus
 m Cal June
 6 Colo "
 405 Pileated Woodpecker
Ceophleus pileatus
 m Fla Jan
 5 Okla May
 405a Northern Pileated Woodp'k'r
Ceophleus pileatus abieticola
 f N Y May
 5 Pa May
 406 Red-headed Woodpecker
Melanerpes erythrocephalus
 m Fla Feb
 5 N J May
 407 Ant-eating Woodpecker
Melanerpes formicivorus
 m N M Apr
 1 Ariz May
 4 " July
 N-4 " May
 407a California Woodpecker
Melanerpes form. bairdi
 m Cal Apr
 10 " "
 407b Narrow-fronted Woodpecker
Melanerpes formicivorus angustifrons
 m Cal June

408 Lewis's Woodpecker
Melanerpes torquatus
 m Colo May
 16 " June
 409 Red-bellied Woodpecker
Melanerpes carolinus
 m Fla Feb
 6 " June
 410 Golden-fronted Woodp'k'r
Melanerpes aurifrons
 m Tex Jan
 5 " Apr
 411 Gila Woodpecker
Melanerpes uropygialis
 m Ariz Oct
 4 " May
 N-4 " "
 412 Flicker
Colaptes auratus
 m f Fla May
 6 S C "
 412a Northern Flicker
Colaptes auratus luteus
 m Me Sept
 12 N W May
 N-10 Ct June
 413 Red-shafted Flicker
Colaptes cafer collaris
 m Oreg
 8 Cal Apr
 413a Northwestern Flicker
Colaptes cafer saturatior
 m Cal Mich
 8 Oreg May
 414 Gilded Flicker
Colaptes chrysoides
 m Ariz Apr
 4 " May
 414a Brown Flicker
Colaptes chrysoides brunneescens
 f L Cal June
 415 Gaudalupe Flicker
Colaptes rufipileus

416 Chuck-will's-widow
Antrostomus carolinensis
 m f Fla May
 2 y " "
 2 " "
 417 Whip-poor-will
Antrostomus vociferus
 m N Y June
 2 Pa May
 417a Stephen's Whip-poor-will
Antrostomus vociferus macromystax
 m f Ariz June
 2 " May
 418 Poor-will
Phalaenoptilus nuttalli
 m Ariz June
 2 Colo July
 418a Frosted Poor-will
Phalaenoptilus nuttalli nitidus
 m Ariz May
 2 Tex May

418b Dusky Poor-will
Phalaenoptilus nuttalli californicus
 m Cal Dec
 2 " May

419 Merrill's Parauque
Nyctidromus albicollis merrilli
 m Tex June
 2 Mex May

420 Nighthawk
Chordeiles virginianus
 m NY July
 2 Iowa June

420a Western Nighthawk
Chordeiles virginianus henryi
 m Ariz July
 2 SD

420b Florida Nighthawk
Chordeiles virginianus chapmani
 m f Fla May
 2 " June

420c Sennett's Nighthawk
Chordeiles virginianus sennetti
 m Tex May
 2 Fla Apr

421 Texan Nighthawk
Chordeiles texensis
 m Tex Apr
 2 "

422 Black Swift
Cypseloides niger
 m Ariz Feb
 f BC Aug

423 Chimney Swift
Chaetura pelasgica
 m NY July
 5 NC June
 N-4 Pa July

424 Vaux's Swift
Chaetura vauxii
 m Cal
 4 Oreg June

425 White-throated Swift
Aeronautes melanoleucus
 m Ariz
 4 " May

426 Rivoli Hummingbird
Eugenes fulgens
 m Ariz Mch
 f " Oct
 2 " July
 N-2 " June

427 Blue-throated Hummingbird
Celigna clemenciae
 m Ariz Oct
 f " May
 N-2 " June

428 Ruby-throated Hummingbird
Trochilus colubris
 m NY May
 f Vt "
 2 Pa "
 N-2 S.C. June

429 Black-chinned Hummingbird
Throchilus alexandri
 m Mont June
 2 Cal May
 N-2 " "

429.1 Violet-throated Hu'mi'b'd
Trochilus violajugulum

430 Costa's Hummingbird
Calypte costae
 m Cal May
 2 " "
 N-2 " "

431 Anna's Hummingbird
Calypte anna
 m Cal May
 2 " Mch
 N-2 " "

431.1 Floresi's Hummingbird
Selasphorus floresii

432 Broad-tailed Hummingbird
Selasphorus platycercus
 m Colo June
 2 " July
 N-2 " June

433 Rufous Hummingbird
Selasphorus rufus
 m (No data)
 2 Wash May
 N-2 Cal

434 Allen's Hummingbird
Selasphorus allenii
 m Cal May
 2 " "
 N-2 " "

435 Morcom's Hummingbird
Atthis morcomi

436 Calliope Hummingbird
Stellula calliope
 m Cal June
 2 " "
 N-2 Nev May

437 Lucifer Hummingbird
Calothorax lucifer
 2 Ariz May

438 Reiffer's Hummingbird
Amazilis tzacatl
 m S Am Apr
 N-2 Nicar May

439 Buff-bellied Hummingbird
Amazilis cerviniventris chal.
 m Tex Apr
 2 " May
 N-2 " "

440 Xantus's Hummingbird
Basilinna xantusi
 m Cal June

440.1 White-eared Hummingbird
Basilinna leucotis
 m Ariz Oct
 f "

441 Broad-billed Hummingbird
Iache latirostris
 m f Ariz June
 2 " May
 N-2 " "

441.1 Xantus's Becard
Platyparis albiventris
 m Mex Apr
 4 " May

[442] Fork-tailed Flycatcher
Milvulus tyrannus
 m Mex Jan
 4 So Am June

443 Scissor-tailed Flycatcher
Milvulus forficatus
 m Tex
 2 May
 N-2 " Apr

444 Kingbird
Tyrannus tyrannus
 m N Y June
 4 Out May
 N-4 N Y June

445 Gray Kingbird
Tyrannus dominicensis
 m Fla Apr
 4 " June
 N-3 " May

446 Couch's Kingbird
Tyrannus melancholicus couchii
 m Tex Apr
 5 Mex May

447 Arkansas Kingbird
Tyrannus verticalis
 m Cal May
 N-3 Utah June

448 Cassin's Kingbird
Tyrannus vociferans
 m Ariz Mar
 5 Apr
 N-4 Idaho June

449 Derby Flycatcher
Pitangus derbianus
 m Mex June
 4 " May

[450] Giraud's Flycatcher
Myiozetetes similis super.
 m f Honduras May
 4 Mex June

451 Sulpher-bellied Flycatcher
Myiodynastes luteiventris
 m f Ariz June
 4 " "
 N-3 " "

452 Crested Flycatcher
Myiarchus crinitus
 m N Y May
 N-8 Mass June

453 Mexican Crested Flycatcher
Myiarchus mexicanus
 m Mex June
 5 Tex Apr
 N-8 "

453a Arizona Crested Flycatcher
Myiarchus mexicanus magister
 m Ariz July
 5 May
 N-5 " June

454 Ash-throated Flycatcher
Myiarchus cinerascens
 m Cal Apr
 5 " June
 N-7 " "

454b Lower Cal. Flycatcher
Myiarchus cinerascens pestinax
 m L Cal May
 f Aug

455 Lawrence's Flycatcher
Myiarchus lawrencei
 m Mex Apr

455a Olivaceous Flycatcher
Myiarchus lawrencei olivascens
 m Ariz May
 3 " "
 N-4 June

456 Phœbe
Sayornis phœbe
 m N Y Feb
 5 " May
 N-6 Ct June

457 Say's Phœbe
Sayornis saya
 m Ariz
 5 Colo June

458 Black Phœbe
Sayornis nigricans
 m Ariz Nov
 3 " June
 N-4 Cal Apr

459 Olive-sided Flycatcher
Nuttalliornis borealis
 m Mass Mar
 4 Me June
 N-4 Cal "

460 Coues's Flycatcher
Contopus pertinax pallidiv.
 m Ariz July
 4 Mex June
 N-3 Ariz "

461 Wood Pewee
Contopus virens
 m N Y May
 4 Pa June
 N-4 N J "

462 Western Wood Pewee
Contopus richardsoni
 m Ariz June
 3 " "
 N-3 Cal "

462a Large-billed Wood Pewee
Contopus richardsonii peninsulae
 m L Cal May

463 Yellow-billed Flycatcher
Empidonax flaviventris
 m Ill May
 4 N H "
 N-4 June

464 Western Flycatcher
Empidonax difficilis
 m Ariz June
 4 " "
 N-4 " "

464.1 St. Lucas Flycatcher
Empidonax cineritius
 m L Cal July

464.2 Santa Barbara Flycatcher
Empidonax insulicola
 m Cal May
 4 " "
 N-4 "

465 Green Crested Flycatcher
Empidonax virescens
 m f Ill May
 3 Pa June
 N-2 SC May

466 Traill's Flycatcher
Empidonax traiillii
 m Mont June
 4 Cal May
 N-3 Ohio June

466a Alder Flycatcher
Empidonax traillii alnorum
 m Ill May
 4 NS " "
 N-3 NH June

467 Least Flycatcher
Empidonax minimus
 m Ill
 4 Me June
 N-4 Ct "

468 Hammond's Flycatcher
Empidonax hammondi
 m Ariz Sept
 4 " June
 N-4 Cal "

469 Wright's Flycatcher
Empidonax wrightii
 m Ariz
 3 Colo July
 N-4 June

469.1 Gray Flycatcher
Empidonax canescens
 m f 2 y Cal June
 N-4

[470] Fulvous Flycatcher
Empidonax fulvifrons

470a Buff-breasted Flycatcher
Empidonax fulvifrons pygmæus
 m Ariz May
 4 " June
 N-3 " July

471 Vermilion Flycatcher
Pyrocephalus rubineus mexicanus
 m Ariz
 f Tex Apr
 3 Ariz June
 N-3 " Apr

472 Beardless Flycatcher
Ornithion imberbe
 f Yucatan Mch

472a Ridgway's Flycatcher
Ornithion imberbe ridgwayi

[473] Skylark
Alauda arvensis
 m Europe
 6 " May
 N-4 " "

474 Horned Lark
Otocoris alpestris
 m NY Nov
 4 Norway June
 N-4 Ont May

474a Pallid Horned Lark
Otocoris alpestris articola
 m Colo Feb
 3 Wis Mch
 N-4 Canada June

474b Prairie Horned Lark
Otocoris alpestris praticola
 m f Mo
 4 NY Mch

474c Desert Horned Lark
Otocoris alpestris leucolæma
 m Ariz
 4 Kan May

474d Texan Horned Lark
Otocoris alpestris giraudi
 m Tex Feb
 4 " Apr

474e Mexican Horned Lark
Otocoris alpestris actia
 m f Cal Nov
 4 " Apr

474f Ruddy Horned Lark
Otocoris alpestris rubra
 m Cal Jan
 3 " May

474g Streaked Horned Lark
Otocoris alpestris strigata
 m BC Apr
 4 Oreg "

474h Scorched Horned Lark
Otocoris alpestris adusta
 m Ariz June
 4 " Apr
 N-4 " May

474i Dusky Horned Lark
Otocoris alpestris merrillii
 m BC Mar
 4 Wash June

474j Sonoran Horned Lark
Otocoris alpestris pallida
 m Cal May

474k Hoyt's Horned Lark
Otocoris alpestris hoyti

474l Montezuma Horned Lark
Otocoris alpestris occidentalis

474m Island Horned Lark
Otocoris alpestris insularis
 m Cal June
 f " May
 4 "

475 American Magpie
Pica pica hudsonica
 m Cal
 8 Colo Apr
 N-6 " May

476 Yellow-billed Magpie
Pica nuttalli
 m Cal Mar
 7 " Apr

477 Blue Jay
Cyanocitta cristata
 m Me Sept
 6 Ct May
 N-5 "

477a Florida Blue Jay
Cyanocitta cristata florincola
 m Fla Feb
 5 " Apr
 N-4 "

478 Steller's Jay
Cyanocitta stelleri
 m Ariz
 5 Cal Apr
 N-5 "

478a Blue-fronted Jay
Cyanocitta stelleri frontalis
 m BC Mar
 5 Cal Apr
 N-5 " May

478b Long-crested Jay
Cyanocitta stelleri diad.
 m Colo Jan
 5 " Apr
 N-4 "

478c Black-headed Jay
Cyanocitta stelleri annectens
 Mont
 5 Utah May

478d Queen Charlotte Jay
Cyanocitta stelleri carlottae
 m BC May
 7 " Mch

479 Florida Jay
Aphelocoma cyanea
 m Fla Feb
 4 " Apr

480 Woodhouse's Jay
Aphelocoma woodhousei
 m Ariz Feb
 4 Utah Apr
 N-6 "

480.1 Blue-eared Jay
Aphelocoma cyanotis
 4 Tex Apr

480.2 Texan Jay
Aphelocoma texana
 m Tex Apr
 f " May

481 California Jay
Aphelocoma californica
 m Cal Mar
 6 Oreg Apr
 N-6 Cal Mar

481a Xantus's Jay
Aphelocoma californica hypoleuca
 m L Cal July

481b Belding's Jay
Aphelocoma californica obscura
 m Cal May
 4 "

481.1 Santa Cruz Jay
Aphelocoma insularis
 m Cal Apr
 N-3 " May

482 Arizona Jay
Aphelocoma sieberi arizonae
 m Ariz May
 9 " "
 N-5 "

482a Couch's Jay
Amphelocoma sieberii couchii

483 Green Jay
Xanthoura luxuosa glaucescens
 m Tex Feb
 4 " May

484 Canada Jay
Perisoreus canadensis
 m Canada Mar
 3 NW T Apr
 N-4 "

484a Rocky Mountain Jay
Perisoreus canadensis capitalis
 m BC Feb
 2 " Apr

484b Alaskan Jay
Perisoreus canadensis fumifrons
 m Alaska Sept
 N-4 " Apr

484c Labrador Jay
Perisoreus canadensis nigricapillus
 m Labrador Apr
 N-2 " May

485 Oregon Jay
Perisoreus obscurus
 m Wash June

485a Gray Jay
Perisoreus obscurus griseus
 m BC Apr

486 American Raven
Corvus corax sinuatus
 m (No data)
 5 Cal Apr

486a Northern Raven
Corvus corax principalis
 m N B
 7 Me Mch
 N-7 " Apr

487 White-necked Raven
Corvus cryptoleucus
 m Ariz June
 7 "

488 American Crow
Corvus brachyrhynchos
 m N Y Dec
 7 Ont Apr
 N-6 Conn May

488a Florida Crow
Corvus brachyrhynchos passcuus
 m f Fla Dec
 5 " Mch
 N-5 " Apr

489 Northwest Crow
Corvus caurinus
 m Alaska Dec
 5 Oreg May

490 Fish Crow
Corvus ossifragus
m Fla Dec
6 N.J. May
N-7 "

491 Clarke's Nutcracker
Nucifraga columbiana
m Colo Nov
f Utah Apr
4 " Mch
N-1 " Apr

492 Pinon Jay
Cyanoccephalus cyanocephalus
m N Mex Mar
4 Colo May
N-5 Utah "

[493] Starling
Sturnus vulgaris
f N.Y. Dec
6 England June

494 Bobolink
Dolichonyx oryzivorus
m Me May
f N.J. Sept
y Me Aug
7 Ill. June
N-6 Mass May

495 Cowbird
Molothrus ater
m Me
2 Mo June

495a Dwarf Cowbird
Molothrus ater obscurus
m Ariz May
1 Mex June

496 Red-eyed Cowbird
Callothrurus robustus
m Tex Oct
1 Mex

497 Yellow-headed Blackbird
Xanthocephalus xanthocephalus
m Cal Apr
6 Utah May
N-4 N.W.T. "

498 Red-winged Blackbird
Agelaius phoeniceus
m Me
f N.Y. June
6 Mass May
N-4 N.Y. June

498a Sonoran Red-wing
Agelaius phoeniceus
m Ariz Apr
5 " "
N-5 " "

498b Bahaman Red-wing
Agelaius phoeniceus byranti
m Tex May
4 Fla

498c Florida Red-wing
Agelaius phoe. floridanus
m Fla Feb
4 " Apr
N-3 " "

498d Thick-billed Red-wing
Agelaius phoeniceus fortis
m Wis Oct
4 " May
N-4 Ass June

498e San Diego Red-wing
Agelaius phoeniceus neutralis
4 Cal May
N-4 " Apr

498f Northwestern Red-wing
Agelaius phoe. caurinus
m Ore Apr
f N.W.T. June
N-4 "

498g Vera Cruz Red-wing
Agelaius phoe. richmondi

499 Bicolored Blackbird
Agelaius gubernator cal.
m (No data)
4 Cal May
N-4 " Apr

500 Tricolored Blackbird
Agelaius tricolor
m Cal Apr
4 " May
N-4 "

501 Meadowlark
Sturnella magna
m Wis Apr
6 May
N-5 Pa "

501a Rio Grande Meadowlark
Sturnella magna mexicana
m Ariz July
5 Tex May

501b Western Meadowlark
Sturnella magna neglecta
m f Cal
6 " May
N-6 " Apr

501c Southern Meadowlark
Sturnella magna argutula
m Fla Jan
f " May
3 " May
N-4 "

[502] Troupial
Icterus icterus
m So Am

503 Audubon's Oriole
Icterus melan. auduboni
m Tex
5 " Apr

504 Scott's Oriole
Icterus parisorum
m Cal May
5 Tex " "
N-3 Cal "

505 Hooded Oriole
Icterus cucullatus sennetti
m f Tex Apr
5 " May
N-4 "

505a Arizona Hooded Oriole
Icterus cucullatus nelsoni
m Ariz
4 Cal Apr
N-4 " June

506 Orchard Oriole
Icterus spurius
 m f N Y May
 6 Pa June
 N-4 Tex "

507 Baltimore Oriole
Icterus galbula
 m f Mich May
 5 N Y June
 N-5 "

508 Bullock's Oriole
Icterus bullocki
 m Cal Apr
 6 " "
 N-5 "

509 Rusty Blackbird
Euphagus carolinus
 m f Me Oct
 m Oreg
 5 N S June
 N-5 "

510 Brewer's Blackbird
Euphagus cyanocephalus
 m Oreg
 7 Cal Apr
 N-5 Colo June

511 Purple Grackle
Quiscalus quiscula
 m N Y May
 5 Pa Apr

511a Florida Grackle
Quiscalus quiscula aglaeus
 m Fla Feb
 5 " Apr

511b Bronzed Grackle
Quiscalus quiscula aeneus
 m Wis Apr
 5 Tex
 N-5 Ont May

513 Boat-tailed Grackle
Megaquiscalus major
 m f SC Feb
 4 " May
 N-4 Fla "

513a Great-tailed Grackle
Megaquiscalus major macrourus
 m Tex Feb
 5 " May

514 Evening Grosbeak
Hesperiphona vespertinus
 m N W T Mar
 f Minn May
 3 Man July

514a West'n Evening Grosbeak
Hesperiphona vespertinus montanus
 m f Ariz May
 4 " July
 N-4 " May

515 Pine Grosbeak
Pinicola enucleator leucura
 m f Me Feb
 y " Jan
 4 Lapland June
 N-4 Maine "

515a Rocky Mt. Pine Grosbeak
Pinicola enucleator montana
 m Alberta Jan
 N-4 " May

515b Cal. Pine Grosbeak
Pinicola enucleator calif.
 m Alaska May
 N-4 " June

515c Alaskan Pine Grosbeak
Pinicola enucleator alascensis
 m Alaska May
 N-4 " June

515d Kadiak Pine Grosbeak
Pinicola enucleator flammula
 4 Siberia June

[516] Cassin's Bullfinch
Pyrrhula cassini
 5 Europe

517 Purple Finch
Carpodacus purpureus
 m Mass Apr
 f Ont Feb
 5 Mass May
 N-3 Me June

517a California Purple Finch
Carpodacus purpureus californicus
 m Oreg May
 5 Cal June

518 Cassin's Purple Finch
Carpodacus cassini
 m Colo
 5 " July
 N-4 Cal June

519 House Finch
Carpodacus mexicanus frontalis
 m Cal
 f Ariz Oct
 6 Cal Apr
 N-5 Cal May

519b St. Lucas House Finch
Carpodacus mexicanus ruberrimus
 m L Cal June
 4 " May

519c San Clemente House Finch
Carpodacus mex. clementis
 m Cal May
 4 " Apr

520 Guadalupe House Finch
Carpodacus amplus
 m G Isl May
 N-5 " "

520.1 McGregors House Finch
Carpodacus mcgregori

521 American Crossbill
Loxia curvirostra minor
 m f N Y Oct
 5 N S May
 N-5 " Feb

521a Mexican Crossbill
Loxia curvirostra stricklandi
 m Colo
 N-4 Ariz May

522 White-winged Crossbill
Loxia leucoptera
 m f Mont
 1 Alaska May
 N-4 N S Apr

523 Aleutian Leucosticte
Leucosticte griseonucha
 m Alaska Jan
 N-4 " June

524 Gray Crowned Leucosticte
Leucosticte tephrocotis
 m Alberta June
 4 " " June

524a Hepburn's Leucosticte
Leucosticte tephrocotis littoralis
 m B.C. June

525 Black Leucosticte
Leucosticte atrata
 m Colo Jan
 f " Dec

526 Brown-capped Leucosticte
Leucosticte australis
 m Colo Jan
 f " Dec

527 Greenland Redpoll
Acanthis hornemannii
 5 Greenland June
 N-5 " June

527a Hoary Redpoll
Acanthis hornemannii exilipes
 m f Minn Apr
 5 Lapland June
 N-5 Alaska "

528 Redpoll
Acanthis linaria
 m N.Y. Mar
 5 Labrador May
 N-5 "

528a Holboell's Redpoll
Acanthis linaria holboellii
 m f Quebec Jan
 5 Greenland June
 N-5 Archangel "

528b Greater Redpoll
Acanthis linaria rostrata
 m Ont Mar
 5 Greenland June
 N-5 Labrador "

529 American Goldfinch
Astragalinus tristis
 m f N.Y. July
 6 " "
 N-6 Ont "

529a Pale Goldfinch
Spinus tristis pallidus
 m f Cal Apr
 4 " June

529b Willow Goldfinch
Astragalinus tristis salicis
 m Cal Apr
 5 " June

530 Arkansas Goldfinch
Astragalinus psaltria
 m Cal May
 4 " June
 N-4 " May

530d Mexican Goldfinch
A. p. mexicana
 m Ariz July
 5 Mex June

531 Lawrence's Goldfinch
Astragalinus lawrencei
 m Ariz Cal Apr
 4 " May
 N-6 " "

[532] Black-headed Goldfinch
Spinus notatus

533 Pine Siskin
Spinus pinus
 m Mass Dec
 5 Cal May
 N-3 " June
 N-4 N.S. May

534 Snowflake
Passerina nivalis
 m Me Dec
 5 Iceland June
 N-6 Alaska "

534a Pribilof Snowflake
Passerina nivalis townsendi
 m Alaska Jan
 5 "

535 McKay's Snowflake
Passerina hyperboreus
 m Alaska July
 N-3 Diomede Isl Al June

536 Lapland Longspur
Calcarius lapponicus
 m f Ill May
 6 Lapland June
 N-6 Alaska "

536a Alaskan Longspur
Calcarius lapponicus alas.
 m Alaska May
 5 Arctic June
 N-5 Alaska "

537 Smith's Longspur
Calcarius pictus
 m S.D. Feb
 5 Arctic June
 N-5 "

538 Chestnut-collared Longspur
Calcarius ornatus
 m (No data)
 5 Minn June
 N-5 N.D. May

539 McCowan's Longspur
Rhynchosphanes mccownii
 m N.W.T. May
 4 Wyo " "
 N-5 N.D. June

540 Vesper Sparrow
Pooecetes gramineus
 m Me Sept
 4 Wis June
 N-4 N.Y. May

540a Western Vesper Sparrow
Pooecetes gramineus confinis
 m Ariz
 4 Mont May
 N-4 N.W.T. June

540b Oregon Vesper Sparrow
Pooecetes gramineus affinis
 m Oreg May
 6 " June

The Warbler

541 Ipswich Sparrow
Passerculus princeps
 m N Y Dec
 N-5 Sable Isl May

542 Sandwich Sparrow
Passerculus sandwichensis
 m (No data)
 N-4 B C June

542a Savanna Sparrow
Passerculus sandwichensis savanna
 m Mass June
 5 Ont "
 N-4 Mass May

542b Western Savanna Sparrow
Passerculus sandwichensis alaudinus
 m Ariz June
 5 Utah June
 N-5 May

542c Bryant's Marsh Sparrow
Passerculus sandwichensis bryanti
 m Cal June
 4 " Apr

543 Belding's Marsh Sparrow
Passerculus beldingi
 m Cal Feb
 3 " May
 N-4 " Apr

544 Large-billed Sparrow
Passerculus rostratus
 m Cal Aug

544a St. Lucas Sparrow
Passerculus rostratus guttatus
 m L Cal July
 f "

544b San Benito Sparrow
Passerculus rost. sanctorum
 m Cal Sept

545 Baird's Sparrow
Coturniculus bairdii
 5 Alberta June
 N-5 N D "

546 Grasshopper Sparrow
Coturniculus savannarum passerinus
 m N Y July
 4 Ohio May
 N-4 N C "

546a West. Grasshopper Sparrow
Coturniculus savannarum bim.
 m Wis
 5 Tex May
 N-3 Utah "

546b Fla. Grasshopper Sparrow
Coturniculus sav. floridanus

547 Henslow's Sparrow
Ammodramus henslowii
 m Fla Mar
 4 Mich May

547a West'n Henslow's Sparrow
Ammodramus henslowii occidentalis
 m f Mo June
 N-4 Iowa June

548 Leconte's Sparrow
Ammodramus lecontei
 m Iowa Mch
 f Canada June
 N-5 N W T "

549 Sharp-tailed Sparrow
Ammodramus caudacutus
 m N J Aug
 5 Ct June

549.1 Nelson's Sparrow
Ammodramus nelsoni
 m Wis May
 5 Alberta June
 N-5 N W T "

549.1a Acadian Sh'p-tailed Spa'w
Ammodramus caudacutus subvirgatus
 m S C May
 N-3 Magdalen Isl June

550 Seaside Sparrow
Ammodramus maritimus
 m N J July
 4 Ct June
 N-4 N J "

550a Scott's Seaside Sparrow
Ammodramus maritimus peninsulae
 m Ga Apr

550b Texan Seaside Sparrow
Ammodramus maritimus sennetti
 m Tex Mch
 4 " Apr

550c Louisiana Seaside Sparrow
Ammodramus maritimus fisheri
 m f La Dec

550d MacGilliwray's S'de Spar'w
Ammodramus mar. macgilliwraii
 m f S C Dec

551 Dusky Seaside Sparrow
Ammodramus nigrescens
 m Fla Mch
 La May

552 Lark Sparrow
Chondestes grammacus
 m Tex Mch
 5 Ont June

552a Western Lark Sparrow
Chondestes grammacus strigatus
 m Ariz
 5 Cal May
 N-4 Utah "

553 Harris's Sparrow
Zonotrichia querula
 m Mo
 f Iowa
 N-3 N W T June

554 White-crowned Sparrow
Zonotrichia leucophrys
 m N J May
 f Mich Sept
 4 Colo July
 N-5 Labrador June

554a Gambell Sparrow
Zonotrichia leucophrys gambelli
 m Ariz Nov
 5 (No data)
 N-6 Alaska June

554b Nuttall's Sparrow
Zonotrichia leucophrys nuttalli

m Cal
 $\frac{4}{N}$ June
 $\frac{4}{N}$ May

557 Golden-crowned Sparrow
Zonotrichia coronata

m B C
 $\frac{4}{N}$ Cal May

558 White-throated Sparrow
Zonotrichia albicollis

m N Y May
 $\frac{5}{N}$ Labrador June
 $\frac{4}{N}$ N H May

559 Tree Sparrow
Spizella monticola

m N Y Dec
 $\frac{4}{N}$ Labrador June

559a Western Tree Sparrow
Spizella monticola ochracea

m Wash Dec
 $\frac{N-2}{N}$ Alaska June

560 Chipping Sparrow
Spizella socialis

m N Y May
 $\frac{5}{N}$ Pa June
 $\frac{N-5}{N}$ Ct June

560a Western Chipping Sparrow
Spizella socialis arizonæ

f Oreg Sept
 $\frac{5}{N}$ Cal June
 $\frac{N-3}{N}$ " "

561 Clay-colored Sparrow
Spizella pallida

m Ariz Oct
 $\frac{4}{N}$ Minn May
 $\frac{N-5}{N}$ NW T June

562 Brewer's Sparrow
Spizella breweri

m Ariz Nov
 $\frac{4}{N}$ N M June
 $\frac{N-4}{N}$ Ca. May

563 Field Sparrow
Spizella pusilla

m N Y May
 $\frac{4}{N}$ Ct June
 $\frac{N-4}{N}$ " June

563a Western Field Sparrow
Spizella pusilla arenacea

m f Iowa May
 $\frac{4}{N}$ Cal " "

564 Worthen's Sparrow
Spizella wortheni

565 Black-chinned Sparrow
Spizella atrigularis

m Cal Mar
 $\frac{4}{N}$ " Apr
 $\frac{N-3}{N}$ " May

566 White-winged Junco
Junco aikeni

m Colo Jan

567 Slate-colored Junco
Junco hyemalis

m N Y Oct
 $\frac{5}{N}$ N B June
 $\frac{N-5}{N}$ Me " "

567a Oregon Junco
Junco hyemalis oreganus

m Oreg Oct
 $\frac{4}{N}$ Cal May
 $\frac{N-4}{N}$ Oreg "

567b Shufeldt's Junco
Junco hyemalis connectens

m (No data)
 $\frac{5}{N}$ Wash Jan
 $\frac{N-4}{N}$ " Apr

567c Thurber's Junco
Junco hyemalis thurberi

m Cal Feb
 $\frac{3}{N}$ " June
 $\frac{N-4}{N}$ " "

567d Point Pinos Junco
Junco hyemalis pinosus

$\frac{N-4}{N}$ Cal May

567e Carolina Junco
Junco hyemalis carolinensis

m N C July
 $\frac{f}{N}$ S C Apr
 $\frac{N-4}{N}$ NC June

567.1 Montana Junco
Junco montanus

m Ariz Feb

568 Pink-sided Junco
Junco mearnsi

m Colo Mar
 $\frac{4}{N}$ Alaska June

568.1 Ridgway's Junco
Junco annectens

m f Ariz Nov

569 Gray-headed Junco
Junco caniceps

m Colo Feb
 $\frac{4}{N}$ " June

570 Arizona Junco
Junco phaeonotus palliatus

m Ariz July
 $\frac{4}{N}$ " June

570a Red-backed Junco
Junco phaeonotus dorsalis

m Ariz June

571 Baird's Junco
Junco bairdi

m Cal June

571.1 Townsend's Junco
Junco townsendi

m Cal May

572 Guadalupe Junco
Junco insularis

m Guadalupe May

573 Black-throated Sparrow
Amphispiza bilineata

f Tex May
 $\frac{4}{N}$ Ariz June

573a Desert Sparrow
Amphispiza bil. deserticola

m f Cal Aug

The Warbler

574 Bell's Sparrow
Amphispiza belli
 m Cal May
 N-4

574a Sage Sparrow
Amphispiza belli nevadensis
 m Ariz Dec
 N-4 Utah May

574b Cinereous Sparrow
Amphispiza belli cinerea
 m f Cal May

574c Lagoon Sparrow
Ammodramus rostr. halophilus

575 Pine-wood Sparrow
Peucaea aestivalis
 m Fla Mar

575a Bachman's Sparrow
Peucaea aestivalis bachmanii
 m S C Dec
 N-5 N C May
 N-5 S C

576 Botteris Sparrow
Peucaea botterii
 5 Ariz May

577 Mexican Sparrow
Peucaea mexicana
 m Tex May

578 Cassin's Sparrow
Peucaea cassini
 m Tex Dec
 N-5 " May
 N-5 "

579 Rufous-winged Sparrow
Aimophila carpalis
 m Mex Mar
 4 Ariz Apr

580 Rufous-crowned Sparrow
Aimophila ruficeps
 m Cal Apr
 N-4

580a Scott's Sparrow
Aimophila ruficeps scottii
 m Cal May
 4 Tex Apr

580b Rock Sparrow
Aimophila ruficeps cremonica
 m Ariz June

580c Laguna Sparrow
Aimophila ruficeps soror

581 Song Sparrow
Melospiza cinerea melodia
 m N Y June
 5 Ill May
 N-7 Iowa "

581a Desert Song Sparrow
Melospiza cinerea fallax
 m Ariz N M June
 N-3 Ariz "

581b Mountain Song Sparrow
Melospiza cinerea montana
 m Ariz May
 5 Utah May
 N-4 Ariz June

581c Heermann's Song Sparrow
Melospiza cinerea montana
 m Cal June
 4 " May

581d Samuel's Song Sparrow
Melospiza cinerea samueli
 f Cal Feb
 4 June
 N-5 " May

581e Rusty Song Sparrow
Melospiza cinerea morphina
 m Oreg May

581f Sooty Song Sparrow
Melospiza cinerea rufina
 m Oreg Apr

581g Brown's Song Sparrow
Melospiza cinerea rivularis

581h Santa Barbara Song Sparrow
Melospiza cinerea graminea
 m Cal May

581i San Clemente Song Sparrow
Melospiza cinerea clementae
 m Cal Mar

581j Dakota Song Sparrow
Melospiza cinerea judii
 N-5 N W T June

581k Merrill's Song Sparrow
Melospiza cinerea merrilli
 m f Wyo Feb

581l Alameda Song Sparrow
Melospiza cinerea pnsilula
 m Cal June
 f " Apr
 N-4 " May

581m San Diego Song Sparrow
Melospiza cinerea cooperi
 m Cal Sept
 f " June

581n Yukatat Song Sparrow
Melospiza cinerea caurina

581o Kenai Song Sparrow
Melospiza cinerea kenaensis

5811 Bischoff's Song Sparrow
Melospiza cinerea insignis

582 Aleutian Song Sparrow
Melospiza cinera
 m Alaska May
 N-4 "

583 Lincoln's Sparrow
Melospiza lincolni
 m Tex Mar
 5 Colo June
 583a Forbush's Sparrow
Melospiza lincolni striata
 m Cal Aug
 f " Nov
 584 Swamp Sparrow
Melospiza georgiana
 m NJ Oct
 4 Pa June
 N-4 " "
 585 Fox Sparrow
Passerella iliaca
 m Me Sept
 N-3 Magdala Isl June
 585a Townsend's Sparrow
Passerella iliaca unalascensis
 m Cal Feb
 4 B C June
 585b Thick-billed Sparrow
Passerella iliaca megarhyncha
 m Cal Feb
 N-4 " June
 585c Slate-colored Sparrow
Passerella iliaca schistacea
 m Cal Feb
 4 Utah May
 585d Stephen's Sparrow
Passerella iliaca stephensi
 m Cal Jan
 586 Texas Sparrow
Arremonops rufivirgata
 m Tex Mar
 5 Apr
 587 Towhee
Pipilo erythrophthalmus
 m f N Y May
 4 " "
 N-4 " June
 587a White-eyed Towhee
Pipilo erythrophthalmus allenii
 m f S C March
 5 Ga June
 588 Arctic Towhee
Pipilo maculatus arcticus
 m Ariz Oct
 4 Colo May
 588a Spurred Towhee
Pipilo maculatus megalonyx
 m Ariz July
 4 Cal June
 N-3 " "
 588b Oregon Towhee
Pipilo maculatus oregonus
 m Oreg June
 N-4 " May
 588c San Clemente Towhee
Pipilo maculatus clementae
 m Cal May
 588d San Diego Towhee
Pipilo maculatus atratus
 m Cal Nov
 4 " May

588e Large-billed Towhee
Pipilo maculatus magnirostris
 589 Guadalupe Towhee
Pipilo consobrinus
 590 Green-tailed Towhee
Pipilo chlorura
 m Oreg June
 4 " "
 N-4 Cal "
 591 Canon Towhee
Pipilo fuscus mesoleucus
 m Ariz May
 4 Colo June
 N-3 Ariz Apr
 591a St. Lucas Towhee
Pipilo fuscus albogularis
 m L Cal May
 2 " Aug
 591b California Towhee
Pipilo fuscus crissalis
 m Cal Dec
 4 " May
 N-4 " "
 591c Anthony's Towhee
Pipilo fuscus senicula
 m Cal Dec
 4 " May
 592 Abert's Towhee
Pipilo aberti
 m Ariz April
 3 " May
 N-3 " "
 593 Cardinal
Cardinalis cardinalis
 m S C Feb
 4 Pa May
 N-3 N J June
 593a Arizona Cardinal
Cardinalis cardinalis superbus
 m Ariz Apr
 3 Tex
 N-3 Ariz May
 593b St. Lucas Cardinal
Cardinalis cardinalis igneus
 m L Cal June
 3 " Aug
 593c Gray-tailed Cardinal
Cardinalis cardinalis canicaudus
 4 Tex May
 593d Florida Cardinal
Cardinalis cardinalis floridanus
 m f Fla Feb
 3 Ga May
 N-3 Fla Apr
 594 Arizona Pyrrhuloxia
Pyrrhuloxia sinuata
 m Ariz May
 4 " "
 594b St. Lucas Pyrrhuloxia
Pyrrhuloxia sinuata peninsulae
 3 L Cal Aug

594a Texas Cardinal
Pyrrhuloxia sinuata texana
 m Tex June
 f " May
 4 " Apr

595 Rose-breasted Grosbeak
Zamelodia ludoviciana
 m Me
 4 Ct May
 N-4 N Y June

596 Black-headed Grosbeak
Zamelodia melanocephala
 m (No data)
 5 Utah May
 N-4 Cal "

597 Blue Grosbeak
Guiraca cærulea
 m Fla June
 4 Ga May
 N-4 " June

597a Western Blue Grosbeak
Guiraca cærulea lazula
 m Cal
 4 " May

598 Indigo Bunting
Cyanospiza cyanea
 m N Y July
 4 Pa June
 N-4 N Y July

599 Lazuli Bunting
Cyanospiza amœna
 m f Cal Apr
 4 " May
 N-4 " "

600 Varied Bunting
Cyanospiza versicolor
 m Tex May

600a Beautiful Bunting
Cyanospiza versicolor pulchra
 f L Cal May

601 Painted Bunting
Cyanospiza ciris
 m S C Apr
 f Fla Jan
 5 La May
 N-4 " "

602 Morellets Seedeater
Sporophila moreletti
 m f April
 4 Tex Aug
 N-5 " May

603 Grassquit
Tiaris bicolor
 m Cent Am
 3 Nassau June
 N-4 Dominicia Mch

[603.1] Melodious Grassquit
Tiaris canora
 m f Cuba July
 3 " Apr

604 Dickcissel
Spiza americana
 m f Mo Sept
 4 Iowa July
 N-4 Kan June

605 Lark Bunting
Calamospiza melanocorys
 m Colo Apr
 5 Kan June
 N-4 S D "

606 Blue-headed Euphonia
Euphonia elegantissima
 m f Mexico
 6 " May

607 Louisiana Tanager
Piranga ludoviciana
 m f NC
 4 Utah July
 N-4 Cal June

608 Scarlet Tanager
Piranga erythromelas
 m f Fla Apr
 4 N S June
 N-4 NY "

609 Hepatic Tanager
Piranga hepatica
 m f Ariz June
 4 " "
 N-3 " "

610 Summer Tanager
Piranga rubra
 m f Fla May
 4 Miss Ga "
 N-4 " "

610a Cooper's Tanager
Piranga rubra cooperi
 m Ariz May
 4 " June

611 Purple Martin
Progne subis
 m Fla
 5 Tex May

611a Western Martin
Progne subis hesperia
 m Cal Aug
 7 Tex Apr

611.1 Cuban Martin
Progne cryptoleuca
 m f Fla May
 6 " Apr
 N-5 " May

612 Cliff Swallow
Petrochelidon lunifrons
 m Mass June
 4 Tex May

612a Lesser Cliff Swallow
Petrochelidon lun. tachina

612b Mexican Cliff Swallow
Petrochelidon lun. melanogastara

[612.1] Cuban Cliff Swallow
Petrochelidon fulva
 3 Jamaica Apr

613 Barn Swallow
Hirundo erythrogaster
 m Me June
 6 Pa May
 N-6 " "

614 Tree Swallow
Iridoprocne bicolor
 m N J Sept
 5 Ct May
 N-6 Minn June

615 Violet-green Swallow
Tachycineta thalassina lepida
 m N Mex Apr
 f Cal May
 5 Oreg
 N-3 Cal June

615a St. Lucas Swallow
Tachycineta thal. brachyptera
 m Cal Aug
 f " June

[615.1] Bahamian Swallow
Callichelidon cyanoviridis

616 Bank Swallow
Riparia riperia
 m N J May
 5 Ont June
 N-5 Pa "

517 Rough-winged Swallow
Stelgidopteryx serripennis
 m Ill May
 7 Wis "
 N-5 " June

618 Bohemian Waxwing
Ampelis garrulus
 m (No data)
 5 Lapland June
 N-5 B C "

619 Cedar Waxwing
Ampelis cedrorum
 m N Y June
 5 N J "
 N-5 Me July

620 Phainopepla
Phainopepla nitens
 m Ariz Oct
 f Cal June
 3 " "
 N-2 " "

621 Northern Shrike
Lanius borealis
 m Me
 5 Lapland May
 N-5 Manitoba June

622 Loggerhead Shrike
Lanius ludovicianus
 m Fla Feb
 6 Miss Apr
 N-5 Fla "

622a White-rumped Shrike
Lanius ludovicianus excubitorides
 m Ariz
 5 Colo May
 N-6 Mich Apr

622b California Shrike
Lanius ludovicianus gambeli
 m Cal Apr
 7 " "

622c Island Shrike
Lanius lud. anthonyi
 6 Cal May

622d San Clemente Shrike
Lanius lud. mearnsi

622e Migrant Shrike
Lanius lud. migrans
 5 N. H. May

623 Black-whiskered Vireo
Vireo calidris barbatulus
 m f Cuba Apr
 N-3 Nassau June

624 Red-eyed Vireo
Vireo olivaceus
 m N Y May
 4 " June
 N-4 "

625 Yellow-green Vireo
Vireo flavoviridis
 m Mex May
 5 June
 N-2 " May

626 Philadelphia Vireo
Vireo philadelphicus
 m Ill Sept
 f Me May
 4 N W T June
 N-4 "

627 Warbling Vireo
Vireo gilvus
 m Mass May
 4 Pa June

627a W. Warbling Vireo
Vireo gilvus swainsonii
 m Ariz May
 f Cal "
 N-4 "

628 Yellow-throated Vireo
Vireo flavifrons
 m N Y May
 4 N C "
 N-4 "

629 Blue-headed Vireo
Vireo solitarius
 m Mass June
 4 " May
 N-4 N W T June

629a Cassin's Vireo
Vireo solitarius cassini
 m Cal
 4 " June
 N-4 "

629b Plumbeous Vireo
Vireo solitarius plumbeus
 m Ariz
 4 Colo June
 N-4 Ariz "

629c Mountain Solitary Vireo
Vireo solitarius alticola
 m N C May
 4 " "
 N-4 "

629d St. Lucas Solitary Vireo
Vireo solitarius lucasanus
 m L Cal July

630 Black-capped Vireo
Vireo atricapillus
 5 Tex May
 N-4 Idaho June

631 White-eyed Vireo
Vireo noveboracensis
 m N Y June
 5 Tex "
 N-4 Conn May

631a Key West Vireo
Vireo novoboracensis maynardi
 m f Fla May
 3 " May
 N-4 " June

631b Bermuda Vireo
Vireo novoboracensis bermudianus

631c Small White Eyed Vireo
Vireo novoboracensis micrus
 m Tex May
 f " "

632 Hutton's Vireo
Vireo huttoni
 m Cal Sept
 4 " May
 N-4 " Mar

632a Stephen's Vireo
Vireo huttoni stephensi
 m Ariz July
 3 " May
 N-4 " "

632c Anthony's Vireo
Vireo huttoni obscurus
 m Oreg Apr

633 Bell's Vireo
Vireo bellii
 m Ill May
 4 Iowa June
 N-4 Neb "

633.1 Least Vireo
Vireo pusillus
 m Cal Apr
 4 " May
 N-4 " "

634 Gray Vireo
Vireo vicinior
 4 Cal June
 N-3 Ariz May

635 Bahama Honey Creeper
Coccyzus bahamensis
 m Bahama May
 6 " May
 N-3 " "

636 Black and White Warbler
Mniotilla varia
 m N Y Apr
 4 Minn June
 N-5 Ont May

637 Prothonotary Warbler
Protonotaria citrea
 m f Ill May
 N-7 " "

638 Swainson's Warbler
Helminthophila swainsonii
 m S C May
 f " Aug
 4 " June
 N-4 " May

639 Worm-eating Warbler
Helmitherus vermivorus
 m f S C May
 6 Pa " "
 N-6 " "

640 Bachman's Warbler
Helminthophila bachmani
 m f Fla Aug
 N-4 S C Apr

641 Blue Winged Warbler
Helminthophila pinus
 m Ct May
 7 Pa "
 N-5 Conn "

642 Golden-winged Warbler
Helminthophila chrysoptera
 m Fla May
 5 Mich May
 N-4 " May

643 Lucy's Warbler
Helminthophila luciae
 m Ariz Apr
 4 " May
 N-4 " Apr

644 Virginia's Warbler
Helminthophila virginiae
 m Ariz Mar
 4 Colo June
 N-5 Ariz "

645 Nashville Warbler
Helminthophila rubricapilla
 m Me Sept
 5 Minn May
 N-4 Ind June

645a Calaveras Warbler
Helminthophila rubricapilla gutturons
 m Oreg Apr
 5 Cal May
 N-5 "

646 Orange-crowned Warbler
Helminthophila celata
 m Mex Feb
 f S C Jan
 4 Alberta June
 N-4 Arctic "

646a Lutescent Warbler
Helminthophila celata lutescens
 m f Cal Apr
 4 " "
 N-4 " May

646b Dusky Warbler
Helminthophila celata sordida
 m f Cal May
 4 " Apr
 N-2 " "

647 Tennessee Warbler
Helminthophila peregrina
 m Wis May
 5 Alberta June

648 Parula Warbler
Compsothlypis americana
 m f S C Apr
 N-4 " "

648a Northern Parula Warbler
Compsothlypis americana usneae
 m f N Y May
 5 Ct June
 N-4 N Y May

649 Sennett's Warbler
Compsothlypis piti. nigrilora
 m Tex June
 4 " "

650 Cape May Warbler
Dendroica tigrina
 m Wis
 f SC Oct
 N-4 NW T May

651 Olive Warbler
Dendroica olivacea
 m f Ariz June
 N-3

652 Yellow Warbler
Dendroica aestiva
 m N Y May
 5 Colo June
 N-5 N Y May

652a Sonora Yellow Warbler
Dendroica aestiva sonorana
 m f Ariz May
 4 N-5 N M "

652b Alaskan Yellow Warbler
Dendroica aestiva rubiginosa
 m f Cal Oct
 N-4 B C June

653 Mangrove Warbler
Dendroica bryanti castaneiceps
 m f Mex Apr
 N-3 " June

654 Bl'k-throated Blue Warbler
Dendroica caerulescens
 m f Me Sept
 4 " June
 N-3 Conn "

654a Cairns Warbler
Dendroica cær. cairnsi
 m SC May
 f " Sept
 4 N C May
 N-4 " June

655 Myrtle Warbler
Dendroica coronata
 m N Y Apr
 5 N S May
 N-4 NW T

656 Audubon's Warbler
Dendroica auduboni
 m Cal Apr
 4 " May
 N-4 Colo June

656a Black-fronted Warbler
Dendroica auduboni nigrifrons
 m Cal Apr
 3 Ariz June
 N-3 "

657 Magnolia Warbler
Dendroica maculosa
 m N Y May
 4 N B June
 N-6 "

658 Cerulean Warbler
Dendroica cerulea
 m f Ont May
 4 N Y June
 N-4 Ont "

659 Chestnut-sided Warbler
Dendroica pennsylvanica
 m Me
 3 Conn June
 N-4 Mass "

660 Bay-breasted Warbler
Dendroica castanea
 m N Y May
 N-4 N S July

661 Black-poll Warbler
Dendroica striata
 m N Y May
 4 N B June
 N-4 "

662 Blackburnian Warbler
Dendroica blackburniae
 m N Y Jane
 f Va May
 2 Minn June
 N-4 N Y "

663 Yellow-throated Warbler
Dendroica dominica
 m f SC Sept
 N C June
 N-4 " May

663a Sycamore Warbler
Dendroica dominica albilora
 m f Ind Apr
 3 Ohio June

664 Grace's Warbler
Dendroica graciæ
 m f Ariz Aug
 4 " "

665 Black-throated Gray Warbler
Dendroica nigrescens
 m Cal Apr
 4 " June
 N-4 "

666 Golden-cheeked Warbler
Dendroica chrysoparia
 m Tex June
 4 " May
 N-4 "

667 Bl'k-th'ted Green Warbler
Dendroica virens
 m N Y July
 4 N B June
 N-4 "

668 Townsend's Warbler
Dendroica townsendi
 m Cal Apr
 f Ariz May
 4 B C June
 N-4 "

669 Hermit Warbler
Dendroica occidentalis
 m Cal Apr
 N-3 " June

670 Kirtland's Warbler
Dendroica kirtlandi
 m f Mich June
 5 " "
 N-4 "

671 Pine Warbler
Dendroica vigorsii
 m Fla Feb
 4 N C Apr
 N-4 Tenn "

672 Palmar Warbler
Dendroica palmarum
 m Fla Feb
 N-4 NW T June

672a Yellow Palm Warbler
Dendroica palmarum hypochrysea
 m Ill Apr
 N-2 Me June

673 Prairie Warbler
Dendroica discolor
 m N Y June
 $\frac{4}{5}$ Mass "
 N-4 Va May

674 Oven-bird
Seiurus aurocapillus
 m N Y May
 $\frac{5}{6}$ Pa June
 N-5 Conn June

675 Water-Thrush
Seiurus noveboracensis
 m N J Sept
 $\frac{5}{6}$ Ont June
 N-5 " May

675a Grinnell's Water-Thrush
Seiurus noveboracensis notabilis
 m Tex Apr
 $\frac{5}{6}$ Ont May
 N-5 " June

676 Louisiana Water-Thrush
Seiurus motacilla
 m Fla May
 f S C Apr
 $\frac{6}{7}$ Ct May
 N-4 Pa "

677 Kentucky Warbler
Geothlypis formosa
 m Ohio Mar
 f S C Aug
 $\frac{5}{6}$ Pa June
 N-5 "

678 Connecticut Warbler
Geothlypis agilis
 m Mass Oct
 $\frac{4}{5}$ Ont June

679 Mourning Warbler
Geothlypis philadelphica
 m S C May
 $\frac{4}{5}$ N Y June
 N-5 "

680 Macgillivray's Warbler
Geothlypis tolmiei
 m Cal May
 $\frac{4}{5}$ " "
 N-4 "

681 Maryland Yellow-throat
Geothlypis trichas
 m N Y May
 $\frac{5}{6}$ June
 N-4 Mass "

681a Western Yellow-throat
Geothlypis trichas occidentalis
 m Ariz May
 $\frac{5}{6}$ Iowa June
 N-4 Cal May

681b Florida Yellow-throat
Geothlypis trichas ignota
 m Fla May
 $\frac{5}{6}$ " "
 N-4 S C "

681c Pacific Yellow-throat
Geothlypis trichas arizela
 m f Oreg Apr
 N-4 Wash May

681d Northern Yellow Throat
Geothlypis trichas brachidactyla
 m Me May
 f " Sept
 N-4 N H June

681e Salt Marsh Yellow Throat
Geothlypis trichas sinuosa
 m Cal Jan
 $\frac{4}{5}$ " May
 N-4 "

682 Belding's Yellow-throat
Geothlypis beldingi
 m Cal Oct

682.1 Rio Grande Yellow Throat
Geothlypis poliocephala
 m f Mex May

683 Yellow-breasted Chat
Icteria virens
 m (No data)
 $\frac{5}{6}$ Kan June
 N-4 Pa May

683a Long-tailed Chat
Icteria virens longicauda
 m Ariz May
 $\frac{4}{5}$ Tex June
 N-4 Cal May

684 Hooded Warbler
Wilsonia mitrata
 m La June
 f S C Aug
 $\frac{5}{6}$ " June
 N-4 " Apr

685 Wilson's Warbler
Wilsonia pusilla
 m Mass May
 $\frac{4}{5}$ Me June

685a Pileolated Warbler
Wilsonia pusilla pileolata
 m Cal May
 $\frac{5}{6}$ Colo June
 N-5 "

685b Golden Pileolated Warbler
Wilsonia pusilla chrysoela
 m Oreg May
 f "

686 Canadian Warbler
Wilsonia canadensis
 m N Y June
 $\frac{5}{6}$ Ont "
 N-5 N H "

687 American Redstart
Setophaga ruticilla
 m N Y May
 $\frac{4}{5}$ Me June
 N-4 Conn "

688 Painted Redstart
Setophaga picta
 m (No data)
 $\frac{4}{5}$ Ariz May
 N-4 "

[689] Red-bellied Redstart
Setophaga miniata
 m f Mex

The Warbler

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690 Red-faced Warbler
Cardellina rubrifrons
 m Ariz June
 $\frac{4}{5}$ " May
 $N-3$ " "
 [691] Red Warbler
Ergaticus ruber

[692] Brasher's Warbler
Basileuterus culicivorus brasheri
 m f Mex Feb

[693] Bell's Warbler
Basileuterus belli
 5 Mex Apr

[694] White Wagtail
Motacilla alba
 m Iceland June
 $N-6$ Holland "
 [695] Swinhoe's Wagtail
Motacilla ocularis
 m Sept
 $\frac{5}{5}$ May

696 Alaskan Yellow Wagtail
Budytus flavus alascanus
 m Siberia Oct
 $\frac{5}{5}$ " June

697 American Pipit
Anthus pensylvanicus
 m Mass Oct
 $\frac{6}{6}$ Colo July
 $N-4$ Alaska June

[698] Meadow Pipit
Anthus pratensis
 m Sweden
 $\frac{6}{6}$ Lapland June
 $N-5$ England May

[699] Red-throated Pipit
Anthus cervinus
 m Egypt
 $\frac{6}{6}$ Lapland June
 $N-4$ "

700 Sprague's Pipit
Anthus spragueii
 m Tex Mar
 $\frac{5}{5}$ N.W.T. May

701 American Dipper
Cinclus mexicanus
 m Colo Mar
 $\frac{5}{5}$ Cal May
 $N-5$ Colo "

702 Sage Thrasher
Oreoscoptes montanus
 m Mo
 $\frac{6}{6}$ Utah May
 $N-5$ " Apr

703 Mockingbird
Mimus polyglottos
 m Fla Oct
 $\frac{5}{5}$ Ga May
 $N-5$ " "

703a Western Mockingbird
Mimus polyglottos leucomelas
 5 Cal May

704 Catbird
Galeoscoptes carolinensis
 m f N.Y. June
 $\frac{4}{4}$ " May
 $N-4$ Pa

705 Brown Thrasher
Toxostoma rufus
 m N.Y. May
 $\frac{6}{6}$ Mich "
 $N-5$ Ct June

706 Sennett's Thrasher
Toxostoma longirostris sennetti
 m Tex Mar
 $\frac{5}{5}$ Apr

707 Curve-billed Thrasher
Toxostoma curvirostris
 m Tex Mar
 $\frac{4}{4}$ June

707a Palmer's Thrasher
Toxostoma curvirostris palmeri
 m Ariz Nov
 $\frac{3}{3}$ " May
 $N-3$ "

708 Bendire's Thrasher
Toxostoma bendirei
 m Ariz Nov
 $\frac{4}{4}$ " May
 $N-4$ "

709 St. Lucas Thrasher
Toxostoma cinereus
 m L Cal June
 $\frac{5}{5}$ " May

709a Mearns's Thrasher
Toxostoma cinereus mearnsi
 m f Cal Dec

710 California Thrasher
Toxostoma redivivus
 m f Cal Mar
 $\frac{3}{3}$ " May

710a Pasadena Thrasher
Toxostoma red. pasadenensis
 m Cal June
 $\frac{4}{4}$ " Apr
 $N-3$ " May

711 Leconte's Thrasher
Toxostoma lecontei
 m Ariz June
 $\frac{4}{4}$ Cal "
 $N-4$ Ariz Mar

711a Desert Thrasher
Toxostoma lecontei aren
 m Cal Oct
 $\frac{3}{3}$ Mex May

712 Crissal Thrasher
Toxostoma crissalis
 m Ariz Nov
 $\frac{3}{3}$ (No data)
 $N-3$ Ariz Mar

713 Cactus Wren
Heleodytes brunneicapillus couesi
 m Ariz Dec
 $\frac{5}{5}$ Cal "
 $N-5$ Ariz Mar

713a Bryant's Cactus Wren
Heleodytes brunneicapillus bryanti
 m L Cal June
 $\frac{5}{5}$ " May

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713b St. Lucus Cactus Wren
Heleodytes bru. affinis

714b Barlow Chickadee
Parus rufescens barlowi
m L Cal May
5 " Apr

715 Rock Wren
Salpinctes obsoletus
m Cal
6 " May
N-7 " "

716 Guadalupe Rock Wren
Salpinctes guadaloupensis
m Guadalupe Dec

[717] White-throated Wren
Catherpes mexicanus alb.
m Ariz July
4 Tex Apr
N-5 "

717a Canon Wren
Catherpes mexicanus conspersus
m f Ariz June
6 Tex Mch

717b Dotted Canon Wren
Catherpes mexicanus punctulatus
m Cal June
6 " Apr
N-5 " May

718 Carolina Wren
Thryothorus ludovicianus
m f S C Dec
N-6 " May
6 N C "

718a Florida Wren
Thryothorus ludovicianus miamensis
m Fla Feb
5 " May
N-5 "

718b Lomita Wren
Thryothorus ludovicianus lomitensis
m Tex Mar
5 " May

719 Bewick's Wren
Thryomanes bewickii
m Ill Apr
5 Ky May
N-6 Tex Apr

719a Vigor's Wren
Thryomanes bewickii spilurus
m f Cal Feb
N-5 " May

719b Baird's Wren
Thryomanes bewickii leucog.
m Tex
8 " June
N-4 "

719c Texas Bewick Wren
Thryomanes bewickii cryptus
m Tex Apr
N-7 "

719d California Bewick Wren
Thryomanes bewickii char.
m Cal Nov

719e Pacific Bewick Wren
Thryomanes bewickii calophonus
m B C Jan
6 Tex Apr

719.1 San Clemente Wren
Thryomanes leucophrys
m Cal May
4 "

720 Guadalupe Wren
Thryomanes brevicaudus

721 House Wren
Troglodytes aedon
m N Y
7 Conn May
N-6 N J June

721a Parkman's Wren
Troglodytes aedon parkmani
m Cal
8 " Apr
N-8 " June

721b Western House Wren
Troglodytes aedon aztecus
m Colo
8 " May

722 Winter Wren
Olbiornichus hiemalis
m Me
7 Ont Apr
N-6 " June

722a Western Winter Wren
Olbiornichus hiemalis pacificus
m Oreg Dec
5 " Apr
N-5 Cal "

722b Kadiak Winter Wren
Olbiornichus hiemalis helleri

723 Alaskan Wren
Olbiornichus alascensis
6 Alaska June

723.1 Aleutian Wren
Olbiornichus meligera
5 Alaska June

724 Short-billed Marsh Wren
Cistothorus stellaris
m Fla Oct
4 Iowa Aug
N-6 Minn June

725 Long-billed Marsh Wren
Telmatodytes palustris
m N Y Dec
4 " June
N-5 "

725a Tule Wren
Telmatodytes palustris paludicola
m Ariz
5 Cal May
N-5 " Apr

725b Worthington's Marsh Wren
Telmatodytes palustris griseus
m f Fla Apr
4 S C Aug
N-7 Fla May

725c Western Marsh Wren
Telmatodytes palustris pleus
 m Ariz Dec
 5 B C June

725e Marian's Marsh Wren
Cistothorus pal. marianae
 m f Fla Oct
 5 " May

726 Brown Creeper
Certhia familiaris americana
 m N Y Nov
 6 Canada May
 N-5 N H "

726a Mexican Creeper
Certhia familiaris albescens
 m Ariz June
 6 " Mch

726b Rocky Mountain Creeper
Certhia familiaris montana
 m N W T May

726c California Creeper
Certhia familiaris occidentalis
 m Ariz Sept
 N-5 Cal Apr

726d Sierra Creeper
Certhia familiaris zelotes
 m B C Apr
 4 Cal June

727 White-breasted Nuthatch
Sitta carolinensis
 m Me Sept
 9 Iowa Apr

727a Slender-billed Nuthatch
Sitta carolinensis aculeata
 m (No data)
 7 Cal Apr
 N-9 "

727b Fla. White-br't'd Nuthatch
Sitta carolinensis atkinsi
 m Fla Nov
 7 " Apr

727c R M Nuthatch
 m Wyo Dec
 f " Jan

727d St. Lucas Nuthatch
 m L Cal May

728 Red-breasted Nuthatch
Sitta canadensis
 m N Y Oct
 6 Idaho May
 N-5 N H June
 N-6 "

729 Brown-headed Nuthatch
Sitta pusilla
 m Fla Feb
 6 S C Apr
 N-5 "

730 Pygmy Nuthatch
Sitta pygmaea
 f Colo Nov
 9 June
 N-6 Ariz May

730a White-naped Nuthatch
Sitta pygmaea leuconucha
 m Cal May

731 Tufted Titmouse
Baeolophus bicolor
 m Fla
 6 Ky May
 N-6 N C "

731a Texan Tufted Titmouse
Baeolophus bicolor texensis
 8 N C May

732 Black-crested Titmouse
Baeolophus atricristatus
 m Tex Mar
 6 "

733 Plain Titmouse
Baeolophus inornatus
 f Cal Jan
 9 " Apr
 N-8 "

733a Gray Titmouse
Baeolophus inornatus griseus
 m Cal July

733b Ashly Titmouse
Baeolophus inornatus cinereus

733c San Francisco Titmouse
Baeolophus inor. restrictus
 m Cal Mch
 f "

734 Bridled Titmouse
Baeolophus wollweberi
 m f Ariz Nov
 5 " May
 N-5 " Apr

735 Chickadee
Parus atricapillus
 m Me Jan
 10 N S May
 N-8 "

735a Long-tailed Chickadee
Parus atricapillus septentrionalis
 m Colo Apr
 6 " Apr
 N-7 "

735b Oregon Chickadee
Parus atricapillus occidentalis
 m Oreg Apr
 8 " May
 N-7 Wash "

735c Turner's Chickadee
Parus atr. turneri

736 Carolina Chickadee
Parus carolinensis
 m N C Nov
 8 " Apr
 N-7 S C Mch

736a Plumbeous Chickadee
Parus carolinensis agilis
 m Tex Mar
 7 " Apr

737 Mexican Chickadee
Parus sclateri
 m Ariz Aug
 5 May

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738 Mountain Chickadee
Parus gambeli
 m Colo
 9 " June
 N-S Cal "
 N-7 "
 739 Siberian Chickadee
Parus cinctus alascanus
 m Alaska
 9 " May
 740 Hudsonian Chickadee
Parus hudsonicus
 m Me Oct
 6 Vt "
 N-S N S May
 740a Kowak Chickadee
Parus hudsonicus stoneyi
 m Alaska Apr
 740b Columbian Chickadee
Parus hudsonicus columbianus
 m B C Apr
 5 N W T June
 741 Chestnut-b'ked Chickadee
Parus rufescens
 m Oreg May
 7 " "
 741a Californian Chickadee
Parus rufescens neglectus
 m f Cal Feb
 6 " May
 741b Barlow's Chickadee
 m Cal Jan
 f " "
 6 Cal May
 742 Wren-Tit
Chamaea fasciata
 m Cal
 5 " June
 N-5 " May
 742a Pallid Wren-Tit
Chamaea fasciata henshawi
 m Cal Sept
 3 " May
 N-4 "
 742b Coast Wren-Tit
Chamaea fasciata phaea
 m Cal Nov
 743 Bush-Tit
Psaltriparus minimus
 m Oreg Feb
 8 " May
 N-7 " Mar
 743a California Bush-Tit
Psaltriparus minimus californicus
 m Cal
 8 " May
 N-7 " Apr
 743b Grinda's Bush-Tit
Psaltriparus minimus grindae
 m Cal July
 744 Lead-colored Bush-Tit
Psaltriparus plumbeus
 m N M Apr
 7 Ariz "
 N-6 "
 745 Lloyd's Bush-Tit
Psaltriparus melan. lloydii
 746 Verdin
Auriparus flaviceps
 m Ariz Oct
 4 Cal Apr
 N-4 " "
 N-3 Ariz "
 746a Pacific Verdin
Auriparus flaviceps lamp.
 m L Cal July
 3 " June
 747 Kennicott's Willow Warbler
Phylloscopus borealis
 m Alaska Aug
 7 " June
 748 Golden-crowned Kinglet
Regulus satrapa
 m N Y Nov
 f " Oct
 10 N B June
 N-9 " July
 748a W. Golden-Cr'ned Kinglet
Regulus satrapa olivaceus
 m Oreg Feb
 11 Wash Apr
 N-8 " May
 749 Ruby-crowned Kinglet
Regulus calendula
 m N Mex Apr
 7 Colo May
 N-8 N S June
 749a Sitka Kinglet
Regulus calendula grinnelli
 m f Oreg Jan
 749b Dusky Kinglet
Regulus calendula obscurus
 751 Blue-gray Gnatcatcher
Polioptila caerulea
 m f S C Mech
 5 N C May
 N-5 " "
 N-5 S C "
 751a Western Gnatcatcher
Polioptila caerulea obscura
 m Ariz
 4 Cal June
 N-5 " "
 N-5 " "
 752 Plumbeous Gnatcatcher
Polioptila plumbea
 m Ariz Mar
 4 " Apr
 N-5 " "
 753 Black-tailed Gnatcatcher
Polioptila californica
 m Cal May
 4 " "
 N-4 " Apr
 N-4 Colo June
 754 Townsend's Solitaire
Myadestes townsendii
 m Cal Feb
 5 Colo July
 N-3 N W T June

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755 Wood Thrush
Hylocichla mustelinus
 m N Y May
 5 Pa. "
 N-5 Ct. "
 756 Wilson's Thrush
Hylocichla fuscescens
 m Mass
 4 N Y Apr
 N-4 Mass May
 756a Willow Thrush
Hylocichla fuscescens salicicola
 m Ill May
 3 Colo. "
 757 Gray-cheeked Thrush
Hylocichla aliciae
 m (No data)
 4 Labrador June
 N-3 Alaska "
 757a Bicknell's Thrush
Hylocichla aliciae bicknelli
 m Ill May
 N-3 N H June
 758 Russet-backed Thrush
Hylocichla ustulatus
 m Oreg. Mar
 4 Cal June
 N-5 " May
 758a Olive-backed Thrush
Hylocichla ustulatus swainsonii
 m Ill May
 4 Me June
 N-4 N H "
 758b Pacific Olive-backed Thrush
Hylocichla ustulatus oedica
 m f Cal May
 N-4 " June
 758c Almas Thrush
Hylocichla ustulatus almae
 m f Colo. May
 N-5 Utah "
 759 Alaska Hermit Thrush
Hylocichla guttata
 m B C Oct
 f " "
 759a Audubon's Hermit Thrush
Hylocichla guttata auduboni
 m Ariz
 4 Colo. June
 N-4 Utah "
 759b Hermit Thrush
Hylocichla guttata pallasi
 m Me Sept
 4 N B June
 N-4 N Y May
 759c Dwarf Hermit Thrush
Hylocichla guttata nana
 m Cal June
 3 " "
 N-3 " "
 [760] Red-winged Thrush
Turdus iliacus
 m April
 5 Lapland July
 N-5

761 American Robin
Merula migratoria
 m Me Sept
 y N Y June
 5 Iowa Apr
 N-5 N Y May
 761a Western Robin
Merula migratoria propinquæ
 m Cal Jan
 4 Colo. May
 N-4 Cal June
 761b Southern Robin
Merula migratoria achrustera
 m f Fla. McH.
 762 St. Lucas Robin
Merula confinis
 m L Cal May
 763 Varied Thrush
Ixoreus naeviaæ
 m B C Feb
 4 Alaska June
 N-3 "
 763a Northern Varied Thrush
Ixoreus naeviaæ meruloides
 m B C May
 f " "
 N-3 " "
 [764] Red-spotted Bluethroat
Cyanecula suecica
 m Alaska Feb
 6 Lapland June
 N-6 " "
 765 Wheatear
Saxicola oenanthe
 m Gt. Yarmouth Apr
 N-5 England June
 765a Greenland Wheatear,
Saxicola oenanthe leucorhœa
 4 Greenland June
 N-5 "
 766 Bluebird
Sialia sialis
 m Fla. Feb
 5 La. May
 N-7 Ct. "
 766a Azure Bluebird
Sialia sialis azurea
 m f Ariz Jan
 4 " "
 767 Western Bluebird
Sialia mexicana
 m Oreg. May
 6 " "
 767a Chestnut-back Bluebird
Sialia mexicana bairdi
 m f Ariz Jan
 5 " May
 767b San Pedro Bluebird
Sialia mexicana anabelæ
 m L Cal May
 768 Mountain Bluebird
Sialia arctica
 m f Cal Feb
 5 Colo. May
 N-6 Utah "

INTRODUCED SPECIES.

This list contains only such species as have been introduced into the United States and are known to breed in the wild state.

English Pheasant	<i>Phasianus colchicus</i>
10	Scotland June
Ring Pheasant	<i>Phasianus torquatus</i>
11	Oreg Nov
	“ May
Green Pheasant	<i>Phasianus versicolor</i>
m f	Japan May
Silver Pheasant	<i>Euplocamus nycthemerus</i>
7	Eng May
Golden Pheasant	<i>Chrysolophus pictus</i>
m (No data)	
8	Ohio June (in Conf.)

Black Grouse	<i>Tetrao tetrix</i>
m f	Scotland Feb
10	Lapland June
European Goldfinch	<i>Carduelis carduelis</i>
m f	Belgium Dec
4	Guernsey May
N-4	England “
English Sparrow	<i>Passer domesticus</i>
m	N Y Nov
6	Pa June
N-6	N Y May
European Tree Sparrow	<i>Passer montanus</i>
4	Europe June
Ostrich	
15	Ariz Apr
Capercaillie	
m f	Norway Jan
6	Scotland Apr

Pheasants—Full Sets, Taken Wild.

<i>Phaseanus holderi</i>	<i>P. persicus</i>
9 Shensi July	11 Transcaspia May
<i>P. summerringi</i>	<i>P. picta</i>
8 Japan May	10 China June
<i>P. shawi</i>	<i>P. wallichii</i>
8 Japan May	9 Nepal April
<i>P. chrysomelas</i>	<i>P. talischensis</i>
8 Aman Daria June	7 Persia June
<i>P. septentrionalis</i>	<i>Euplocamus swinhonis</i>
9 Volga May	5 Formosa March
<i>P. versicolor</i>	<i>E. horsfieldi</i>
9 Japan May	2 Manipur March
<i>P. colchiens lorenzi</i>	<i>E. nycthemerus</i>
5 Kura Basin July	10 China May
<i>P. scintillans</i>	<i>E. melanonotus</i>
3 Hondo Nippon May	6 Sikkim May
<i>P. ellioti</i>	<i>Polyplectron chinquis</i>
7 China June	2 Tenasserim June
<i>P. reevesi</i>	<i>P. germaini</i>
9 Shensi May	2 Cochin-China May
<i>P. amhersti</i>	<i>Crossoptilon mantchuricum</i>
7 China June	11 Peeha N China July
<i>P. satchenensis</i>	<i>Argus giganteus</i>
9 Nan-Shan May	2 Upper Pakchon May
<i>P. mongoliens</i>	<i>Ceriosnis caboti</i>
11 China June	6 China June
<i>P. principalis</i>	
10 Pandj-deh Apr	

The Warbler--Second Series.

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" " Gray Flycatcher - - - - - " 2	



EGGS OF THE
SANTA CATALINA PARTRIDGE



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JOHN LEWIS CHILDS, EDITOR

Eggs of the Santa Catalina Partridge

(*Lophortyx catalinensis*. Grinnell)

THE Santa Catalina Partridge was described in *The Auk*, Vol. XIII, No. 3, July, 1906, by Mr. Joseph Grinnell. The three eggs figured in our plate are from a set of ten taken July 12th, 1907, at Avalon, Santa Catalina Island, Cal., by P. I. Osburn. Nest on ground near eucalyptus tree and by a fence. A slight depression in ground lined with dry grass. Dry grass eight inches tall surrounded nest and concealed it. Diameter of nest inside, four inches. The clutch consisted of ten eggs slightly incubated. The three specimens shown on our plate are a fair representation of all. The eggs are large and handsome, in these respects excelling eggs of any other Partridge. Color almost pure white with few small specks and dots of brown, and large conspicuous yellowish-brown blotches which give the eggs a distinct appearance. They are unlike the eggs of any other North American Partridge. The three specimens which we show are as nearly accurate in size and color as it is possible to get them. The coloring was done by hand by Zoltan de Takach Gyongyoshalaszy. The ten eggs of the clutch measure respectively 1.20 x 1.02—1.21 x 1.00—1.22 x .97—1.21 x 1.00—1.17 x .99—1.21 x .98—1.19 x .97—1.20 x .98—1.22 x .99—1.03 x .91.

The Breeding of the Arctic Towhee

By P. B. Peabody

WHERE the difference between two allied races of birds consists, chiefly, in the robustness or the slenderness of the hind-toe, differentiation becomes a puzzling matter. And when the non-expert *pronounces*, on the sole testimony of the field glass, the result is pretty sure to be confusion worse confounded. The above fairly illustrates the questions that are being asked and the problems pressing for solution as regards the status of the Towhee races *megalonyx* and *arcticus*; in that particular region wherein the habitats of the two geographic races overlap. A part of this region lies in Northeastern Wyoming. Professor Knight's most faithful, painstaking and comprehensive work on the birds of Wyoming is in error precisely in those directions wherein a master of one science might be expected, inevitably, to evince errors when dipping into non-cognate sciences in which he may be greatly interested. In regions wherein all birdlife presents numerous and grave confusions the wiser way, for the non-critical,—(in which category the writer of this article belongs),—is to refer material to those whose judgment may safely be considered final.

This premise is here set down because of the fact that the "Birds of Wyoming" sets down the prevailing Towhee form of the Black Hills as being *megalonyx*; and cites *arcticus* as less frequently occurring. In point of fact the reverse is true. One might even venture a safe prediction that any example of *megalonyx* that might be found in extreme northeastern Wyoming will prove to be stragglers.

While the Eastern and the Arctic Towhees occur together, during the migrations, in Kansas, the Eastern Towhee has never, so far as I know, been taken in the region of Wyoming covered by this article. In Kansas we note, with great interest, the markedly-dissimilar similarity that prevails between the plain birds and the streaked birds that flit through our Kansas hedges in May. But during this silent period we have no opportunity of noting how greatly unlike, in voice and in nuptial-time manners, are the two "sorts" of Towhee the over-lappings of whose summer habitats lie, roughly, along the Colorado-Kansas border-line. The songs of the two differ totally. So do their call-notes and alarm-notes. When I went out to Wyoming I found my-

self eagerly listening for the "mew" which Captain Bendire attributes to the Arctic Towhee. Students familiar with the latter, in the bush, will not need to be told that no mewing was heard. The call is really a whine, difficult of paraphrasing; but it is quite unlike the Catbird's cry. (Yet it is quite possible that Arizona birds have developed a cry of their own; as do, —for instance,—the Song Sparrows of extreme Northern Minnesota.) No bird "swarms" in Northern Wyoming; and few birds are really abundant. The Arctic Towhee is no exception. The birds just come floating in, along the



ARCTIC TOWHEE NORMAL NEST AND SITE

canyon-margins just when these usually begin to show their leafage: about the first of May. Shy creatures they usually are; seldom sitting boldly out in the open for their vesper song, as does the eastern bird. But the male hides among the leafage, often-times quite near the ground. Thence he trills out his *motif* pensively; the close of the song suggesting that of his neighbor of the East.

The song of the Arctic might well be noted, before we leave this topic. The songs are more varied than those of the eastern bird. They are also somewhat weaker in timbre and dynamic. The closing note is articulated

as "tse-e-e-e"; or "te-e-e-"; or, sometimes, simply as "e-e-e". The "at-tack" is variant. Some individuals preface the terminal with a trilling "di-di-di-di-", five or six times repeated in monotone. A variant of this preface is given in my note-book as "te." A more deliberate form is "dis,"—(iterated slowly and but three or four times.) A common song, altogether, is "Dis-dis-dis tzé-e-e-e". A variant of this is "tsér-tsér-tsér-té-e-e-". But the oddest vocable of all,—as well as one of the commonest,—rings rapturously out as: "Cútt-sie-cút-sie-jée": (U as in Full). All these with a number of variant forms ring out along the canyons, from steep-side to bottom most of the summer long. The Arctic Towhee is usually paired, in Wyoming, about the middle of May. By the first of June layings are well-nigh complete; and from that date onward big grey-haired boys may enjoy the excitement of flushing the sitting Towhees from their nests.

As a boy, in Minnesota, I used to consider it quite a feat to find the nest of a Towhee. One is inclined to consider it so, still. Our Minnesota nests are oftener in the openings where a sitting bird is not so readily flushed; or else in undergrowth so dense that she flushes without being seen. But the Arctic Towhee does not love the dense bush growths. It does, indeed, frequent the isolated patches of burr-oak along the sandy sides of the broader canyons. But marked preference appears to be shown for weedy or shrubby areas where the growth is not more than two or three feet high, at the highest. Amid such locations one who will bray the morning dew or face the evening gnats may enjoy rare sport. A choke-cherry "wand" is cut, as long as may be switched about without fatigue, and the bark removed. With this the one who learns the not-easy knack of flicking the masses of rose or of buck-brush just far enough ahead of him may put himself in the way of a fairly exhaustive study of the nidology and the oology of the Arctic Towhee. With one exception all nests observed by me have been on the ground. They are usually very much coarser and more bulky than the nests of Towhee the Common. As for the eggs: they seem curiously to blend the extremes in marking of both Far Eastern and Far Western birds. We find not a few sets that are pale-ly striped as are eggs of the ordinary pale eastern type. But the bulk of eggs are more closely allied, in markings, to those of *megalonyx*. A very few, (apparently), are more heavily marked than either; resembling certain rarely-beautiful types of the eggs of the Solitaire. (The markings, however, are denser than those of any solitaire eggs I have ever seen.)

Unfortunately my nesting records for 1905 are not available. And one dare not trust memory, in the matter of egg-numbers. I am, however, quite certain that sets are prevailingly of Four, while I know that complete sets of three are quite rare. ("Three-fifths of observed sets — Five": MS., "Nesting Ways"). The Arctic Towhee is a most assiduous parent. He is,

moreover, exceeding fussy. Judging from the prevalence of wood rats and Canada Jays, amid his environ, there is good cause. The male never ceases his whining, when the eggs have evolved into young. As often, with other birds, the male devotes himself often to scolding intruders; while his mate does the foraging.

Nests are usually placed in the soft earth. Margins along the creek bottoms are perhaps more favored than other sites. Nests also occur along the edges of over-grown banks; and, (rarely?), beneath the shelter of a rock, Junco-wise. Three unusual sites have been brought to light: My blood-



ARCTIC TOWHEE NEST BENEATH ROCK

thirsty wretch of a pointer was detected in destroying a brood of callow Towhees; which had been bred beneath the shelter of drift left stranded by a flood. These five young varied curiously in development. A second nest was placed in a goose-berry bush, in a narrow luxuriant canyon. This nest was abnormally made of leaves, "nothing but leaves". (And the moral of the well-known hymn might fittingly be drawn here, also: the sitter, apparently, had no mate; and her three eggs were infertile). My good friend and co-worker, Charles W. Metz, reports the strangest find of which I have any record: On June 28th he found an oblong nest containing SEVEN eggs!

Now, sets of five are common; and Mid-June dates prevail. But who ever heard of a nest containing fresh eggs the Last of June? And, who ever heard of a set of even *six* eggs of *any* Towhee? (The fact that the nest, in this case, was elongate makes me strongly inclined to believe that two females may have pooled their issues. I have, however, seen this set; and the eggs are of remarkable uniformity.)

In any case the coupling of a large set with a late date is remarkable. I know but of one bird,—the Clay-colored Sparrow,—which seems habitually to lay larger second-sets of eggs than are laid at the opening of the season. Just the reverse is usually the case. One may conclude, fittingly, with the statement that the Arctic Towhee does not appear normally to lay two sets in Wyoming. All analogies are against it. No other bird does. And even the very plants know better. In a region where even the *Compositae* prepare for early drouth by putting forth their squat masses of blossoms with the first rains of April it would be fairly absurd to expect any intelligent bird to lay eggs the requisite food for which might never be forth-coming. Even the very Swifts,—the far-faring white-throated Swifts,—begin to leave their rocky fastnesses by Mid-August. Even the lecherous Brewer Sparrow does not ordinarily rear a second brood. The southward *hegira* begins early; while yet the sage-plains retain a tint of their greenery. Leisurely but betimes the summer birds begin to depart, as the open range turns grey: and soon the habitant Horned Lark and the grasshopper-devouring Sage Hen are pretty much all that are left, of bird-life, to brighten the glaring monotony of August days.

Rock Wren the Cliff Dweller

By P. B. Peabody

HOW strangely beautiful is that law of Nature whereby to him that *hath-not* is given. In human haunts most of beauty flocks by itself: in the great out-of-door world Beauty and the Beast lie down together. On the gaunt sage plains of the West the whilom traveller, sipping his after-dinner sherbet in the buffet-car, marvels not a little at the manifest and unmitigated hideousness of things. "Ugh, what a desolate country!" he murmurs to himself, with a small frown upon his blase face; and then he turns to his morning paper to scan the latest skit concerning frenzied finance. But the tall, clear-eyed cow-boy, habitng the desert to hide a heart-ache, has learned the wilderness better. Stripping the saddle from his hot horse, at the end of a mad chase after the stampeding bunch of recently landed dogies he drops the reins beneath the shade of a scanty bull-pine at edge of a curious, uptilted, far-reaching sand-stone moraine; lies down upon the still-cool reaches of bare shale, and listens, with every sense acute, to an odd little song that breaks the silence from one lift of the rock, a hundred yards away. He has never learned the name of that bit of a brown-grey bird that slips so coyly from crevice to crevice, accentuating every shift with fresh iteration of his little lay: "Heever, hee-ver, hee-ver", comes the clear, small note,—"Heever, hee-ver; hee-ver,—ler-zée, ler-zée, ler-zée,—tzee-h'l, tzee-h'l, tzee-h'l, tzee-h'l,"—and then a little pause. Finally, after many iterations of these and other like vocal whimsies, there comes creeping out upon the still air a soft, whispered yet marvelously pervasive sound; an awesome attack upon the ear-nerves almost as creepy as the muttered "pur-r-r-r-v" of the solitaire: "S' jee-e-e-e-e-us,—s' jee-e-e-e-e-us,—s' je-e-e-e-e-e-us",—steals out the trickling sound. And while the Rock Wren disappears behind the corner of his favored singing rock, only to appear, instantly, upon another, intent on similar devices, the cow-boy flicks the corner of one eye down to the one poor little black sage bush beside him; to learn whether there be not coiled there, emitting that creepy sound, that loathsome enemy of beast and man: the rat-



ROCK WREN NEST UNDER SLOT OF SANDSTONE ON STEEP HILLSIDE

tler. Then the cow-boy softly laughs, way down in his throat: "Just beauty and the beast,"—he murmurs to his cayuse. One pictures thus the Rock Wren as at least a whilom bird of the rocky margins of the plains. And the picture is utterly true to nature. Not only, moreover, does the male Rock Wren thus occur as a sort of tramp, whiling away the hours that intervene between one cliff-city and another; but he actually nests there. The bird which the cow-boy heard was actually a father *in futuro*; for a nest lay safely hidden, beneath some fragment of a rock, a couple of stone-throws away. But the cow-boy never found it: neither,—to be frank,—did anybody else. Nevertheless, the cow-boy's friend, crouching from fierce mid-afternoon heat in a little gulch not forty rods from the singing-rock, one June day, beheld the male Rock Wren guiltily sneaking along, from rock to rock with something in his beak that looked almost as big as a kangaroo, but was, in very truth, just a big rocky mountain locust.

The books tell us that the Rock Wren nests in pot-holes of the weathered rocks; and of course the books are right. So, likewise, are the popular bird articles; written, mayhap, by some ambitious public school teacher, with sundry Nature-Study Books grouped about her, some fevered evening that

still reeks of the "cares that infest the day." But one very strongly believes; that the pot-hole imputation lives on because the more superficial observer just finds the pot-hole nests; and never finds the other, more common kinds. Indeed, the Rock Wren *does* frequent the canyon walls of sand-stone. This is, in fact, his most continually-favored haunt. But the nestings, in greater part, lie quite elsewhere; least-wise, in earth-quake-rent Wyoming. We read, a moment ago, about the dreariness of the desert. In winter-time, especially, the desolation almost astonishingly accentuates itself. An occasional jack-rabbit shoots out from the sage brush, as one plods through it, amid the scuff of remnants of spitefully hurtled snow. Rarely a Horned Lark leaves a track behind him, in the little snow patches. But, as for the whole, bird sights and bird sounds are nil, most winter days. The Crossbill may be in full song; and the Solitaire bubbles forth his rich, glad lay. But these live, wintrally, in haunts far deeper of tree-covert than those wherein the naturalist loves to wander, during the Winter days that are continually suggestive of Spring.

When mid-April passes and the air grows balmy, then, some day, there comes, delightfully *suggested*, rather than *sung* to the ear of the student, a renewal to his recollection of some one of the many varied forms of the Rock Wren's call. These appear to be often quite rather imagined than actually *heard*: so delicate are they, and so faintly yet so clearly perceived. Really, the photographic student of birds who grows familiar with Rock Wren songs quite often finds himself whimsically comparing the notes of this bird with the details of beauty in some soft, well-balanced negative; which brings back to the habitant of regions-once-familiar a thrill of deepest pleasure; as all their old delights are suggested to his soul anew.

By mid-May the Rock Wren has become an old-timer, among the crags and along the talus. He has been watched, most furtively, from behind se- curest hiding places. He has been spotted, with all the wariness and patient vigilance of any old detective. Yet he has never been betrayed into doing anything but just sing,—sing,—and hunt, with untiring zeal, for his food among the crannies of the rocks. Yes,—one may find nests: plenty of them. They are indestructible, save through erosion. Like the "remains" of the cliff-dwellers, they are common, indeed. They are, in fact, so common as to give the un-accustomed, to whom such nests are shown, the impression that the birds, also, are common. This,—alas!—is far from true. The Rock Wren in Wyoming is not prolific; and it has many, many enemies. It is possible that the "talus-habit" may have been acquired by the Rock Wren because of the readiness with which rats and mice may plunder nests that are built into the pot-holes. It is quite fair for even a bird to argue; that it must be much more difficult for vermin to find a nest hidden under some one of a dozen or twenty rocks that look almost exactly alike; than to find the same nest in

one of two or three conspicuous holes in the rock-walls. Like many another ignoramus the writer looked forward to nesting Rock Wrens as a palpably "easy" prey; in the days wherein he dreamed of full-note books and complete series of photographs concerning the bird-life of that most fascinating remote-West. But the writer is humbler, *now*!

Naturally anxious to establish the time of egg-laying for this species, in Wyoming, he spent many a weary and hot half-hour in delving under sundry slabs of sand-stone beneath whose entrance a nice, neat paved walk of sticks and stones was visible, just above him, on the talus of steep hill-sides. Many and many a pair of manifestly-anxious birds were watched and followed with most vigilant care and untiring patience. Yet no nest with eggs was ever found in three seasons of hard work among the canyons and moraines. (The nearest approach to discovery came, one late-June afternoon, when I toiled among vast boulders on a very steep canyon-side; looking for a stray young *bubo*. As I rested, beneath the shadow of a great rock, for a brief moment, I suddenly *saw* a male Rock Wren whom I had long been *hearing*, dive down from the heights above, with a few unknown somethings in his beak; and disappear beyond the surface of a giant boulder. I confess, I gave a yell that might have been heard clear to the canyon's bottom, for,—I just *had* him *this* time! But *he*, rather, had *me*; beneath a great slab, beyond an entrance not yet paved, there was found just a rude scratch-ed hole; and the semblancé of a rootlet nest. I am wondering, even yet, whether the lifting of that boulder put an end to the home-making; or whether the work so rudely interrupted by a *man* was just the result of ir-restrainable energy, on the male Wren's part.)

And yet the finding of occupied nests is no great task: after the eggs are hatched. A filled-beak and a noisy anxiety betray the nest-vicinity; and the rest is not hard. An hour of watching will usually suffice; if the man who searches be a cunning hider. Such, in any case, he will *have* to be; for, with the exception of the Audubon and the Mourning Warblers I know of no small bird more cunningly successful in finesse than this same fussy, bowing, antic-indulging Rock Wren. The moment Man appears in the region of the nest both Rock Wrens are feeding young under every rock within eye-reach. Yet parental anxiety betrays all, at last. The rarely-beautiful site pictured with this article, under canyon-side flags of sandstone, was found by hiding amid a clump of small *bullpines*, along the canyon bottom; at the very instant when a Rock Wren appeared on the slopes bearing food for the young in its beak. Dashing under cover before he had betrayed his presence, the searcher had the rare satisfaction of seeing the parent disappear among the talus at least a hundred yards away. By scurrying to another vantage-point, while the parent was again away after food, and thus more-nearly locating the exact rock where-under the young lay hidden, it became pos-



ROCK WREN NEST IN POT HOLE OF VERTICAL WALL

sible to make a sudden rush, when the parent bird returned with the food; flushing it, thus, but a few feet away. A tragic element entered the photographing of this nest: Desirous of catching the parent birds at home and little dreaming of the possibility of any danger to the young that might not readily be *seen*, the bulb-presser left the camera in commission, for a time. Returning, a half-hour later, he found the parent Rock Wrens absent still; while, as he lifted up the protecting rock, there lay revealed a horrid coil of a young adder; which was leisurely swallowing the second of the three week-old young that had lain in the neat nest of rootlets. Humanity mastered any possible latent zeal for "material" in the way of startling negatives. A grab by the tail and the serpent disgorged the young that was yet in sight; a crunch of the heel and the beautiful serpent was dead. But so likewise, was the one young which had become already, "*en gastris*": "*in the stomach*"; the old Greeks used to say, aenit pregnancy. Usually, at such pathetic outcome of brutal human stupidity I would have been actually *sorry*: as it was, I could only bite my lips until the blood came. But the two remaining young made-a-live of it. I saw them, later, hearty, hungry, vociferous. Nevertheless, nowadays, when I leave a set-up camera to disarm timorous birds I leave with it a lieutenant, armed with a gatling gun. By Mid-June

of my first Wyoming season I became convinced; that the only possible way for me to secure eggs of the Rock Wrens was to find such as might have proven infertile,—and there seems not a few such,—in nests wherein the hungry young should betray to me the home. Two such I actually found: dainty, polished things, most delicately specked, like occasional eggs of Winter Wren, Kinglet and Rocky Mountain Nuthatch, with faintest dots of cinnamon. (It would be a matter of great satisfaction to learn the reason for the prevalence of infertile eggs, with this Wren; and especially where the eggs are few, as in Wyoming. Five is my maximum, of observed conditions.)

The nest-approaches, observed under the boulder-sheltered nests, were usually of considerable length. It is impossible for a negative to image these, in proper perspective; but the "side-walk" is something at least a foot long. It is composed, mainly, of worn pebbles ranging up to an inch or a little more, in diameter; and of sticks. The latter are sometimes really many in number; and the mingling of wood and stone, beneath some slightly uplifted slab of sand-rock, gives a well-nigh startling evidence of previous occupancy. (Beneath one pot-hole, four feet above the ground at foot of a high canyon wall, I found at least a quart of pebbles and short cedar and sage sticks; a later finding, to be chronicled, presently, giving one the impression that the presence of this material beneath the nest-hollow may not have been wholly accidental. The nest in this pot-hole was largely made of bark-shreds; while all other nests observed, without exception, were made entirely of small roots.)

No keener zest could possibly be found in any form of bird study than in the tracing of their *lares* and *penates* of a pair of food-bearing Rock Wrens. One catches, in such processes, an insight that seems fairly telepathic into the mental processes of a parent bird. Fairly straining after insight of this sort I once followed two Rock Wrens, by slow stages, rod by rod up a most picturesque and rocky gorge. At the upper verge of this the nesting place was finally found, and a fairy-like home it was. There was a tiny stone castle; and the nursery nestled under the front piazza. The children were playing among the little ferns, at the door-way; but scuttled away to the inner recesses of the castle, far beyond the nursery, at the man's approach. Something unusual in the appearance of these little creatures prompted examination; and I was startled to find; that the body of every one, from the smallest to that of the one three times its size, was nourishing great grubs, fully a half-inch long, festering in sides, abdomens, *heads*! These disgusting parasites were carefully removed; but the youngest bird of all succumbed to the shock. The rest all lived and matured: so far as later observations made apparent. It was a surprise to find no signs of any nestings of the Rock Wren, in Wyoming; just as it had been a matter of wonder that

the first nesting should be so late. All indications were for Early-June nesting; which leaves a good long time for the prenuptial joust, in May.

And it is in May that the calls are most varied, animated, fascinating. There is infinite variance, even with the utterance of the same type of call; and most of the songs and calls are soft and ventriloquial, always iterative, often exquisitely sweet. On the contrary some calls remind one of the Welsh language, all consonants. One such might be written down as "Tzr-r-r-r-", (four times repeated); another is just a smoothly-rolled "R-r-r-r-"; while a third is a rather sweet and liquid,—"Tl-l-l-l-l": much like a certain conceit of the Robin. A fourth consonantal utterance is much like the rolling, "R-r-r-d", (about six times repeated), which is a favorite trill of the Mockers. There are many other vocables, varying very greatly in quality. And all through the latter part of May these calls resound along every canyon and upon every rock-bottomed, pine-topped hill. Most musical, perhaps, of all the Rock Wrens I ever heard, was a certain male to whom I have always imputed the most wonderful castle, of its kind, that I ever saw. Right where a deep, narrow canyon had its masses most madly and indiscriminately heaped together, at a point where the resulting masses were realistically castellate, there was a shattered buttress which had the appearance of having long been the fastness of a Rock Wren. Beginning far down toward the base of the buttress the bits of sandstone had been piled, one atop another; exactly like the ancient fabrications of the cliff-dwellers. The resulting mass of pebbles rose to the top of the narrow cliff which it filled; and its continuation paved the cavity, just above the cleft. The pavings ran in as far as I could see or probe. And enough of sticks were present to prove the Rock Wren origin of the work. Near this fortification, always, during two successive Summers, was to be found a most-sweet singer. He seemed always alone; and, while ever near the cavity, so wonderfully modified with an industry so amazing, I never actually found him at the spot but once. And even then he seemed uncaring. To have counted all the bits of stone in this wonderful, camera-defying structure would have been impossible. The number must have reached far into the thousands. And if the work were, indeed, the result of the activity of one bird, the industry of that one was even more wonderful than his voice.

I can hear him yet, even as I can yet see his home, in memory. There was one soft, resounding, "Ee—oh, ee—oh", sung out, again and again; varied with a blither, more animated, "Tsa—réé". Occasionally there was a laconic, "lit," six or seven times deliberately repeated. This might be followed by a resounding, "Eve,—eve,—eve". (This was usually drawled into a nasal "Ee-uv"). But the oddest note of all was a mincing, affected, "t̄i — t̄i — t̄i — t̄i —": (short i). In this and in several other notes of the sort one was often reminded of the more deliberate utterances of the Mockers

The Warbler

Indeed, had there been greater assurance of the wintering of the Rock Wren in mocking-bird country one might well have guessed where this brilliant singer had been to school. In any case, the wonder was why this particular bird had no mate; though, indeed, there be bachelors *and* bachelors. But surely, no more winsome bachelor ever rollicked and sang, and lived care-free than my sweet Rock Wren singer of the cliff-dweller cliffs.

Field Notes from the Upper Penobscot, Maine

By J. W. Clayton

ABOUT the middle of June I took two Red-Shouldered Hawks from the nest and found their ears full of maggots. I picked five out of one ear and the other was full also. I intended to save some to send away for identification but the next day they had all left, showing they were not the common blue flesh fly. I have found them under the wings and on the neck of young Swallows and they changed into a fly very similar to the common blue fly. The skulls of these Hawks were considerably blood-shot and inflamed. The ears were swollen to such an extent that one was closed. I found quite a number of green hemlock boughs in the nest and in the bottom of the nest was a stick about one inch through at each end and fully four feet long. There were the remains of a freshly killed warty toad in the nest which was situated in a beech tree about 35 feet up.

About the 25th of June I spent considerable time watching a Yellow Palm Warbler, a female I think. Her actions indicated that she was looking up a chance to build. She would go under the low evergreens and look into all holes, sometimes picking up a few bits of wood, etc. I felt sure of finding a nest there in the near future. I returned on the 2nd of July and took up the search again. Could not find any nest on the ground nor could I start the bird anywhere, but in a low fir bush I found a nest partly destroyed with one egg in it and it so closely resembled the nest of the Yellow Pine Warbler that I am tempted to believe that this bird sometimes builds in low bushes. I have taken the nest and egg for identification. The only other bird that it would be likely to be in this vicinity is the Black Throated Blue Warbler and I never saw a nest of this bird with no feathers in its makeup. The nest of young Yellow Palm Warblers which I previously found was in a pasture under a cedar bush about 150 feet from a house. The next time I visited it, which was long before the young could have left the nest, it was empty and no amount of hunting revealed the old birds. I concluded that it was the work of a cat or crows.

I did not find either Tennessee or Wilson's Warblers' nests this year. I observed two pairs of Tennessee Warblers that were evidently nesting and I spent considerable time hunting for them but was not successful. Quite

a number of Wilson's Warblers nest in this vicinity but I did not succeed in locating any. It has rained hard several times, spoiling many nests that I was watching. I had ten nests located that were ruined by one rain.

The Tree Swallows lay in rather small sets and there are several pairs that have no nests but hang around other nests and as soon as the broods come out, they will take possession.

I saw a King Bird light on a Bald Eagle's head and appear to be picking at his feathers. One Eagle alighted in a pine right over my head last week. It was an immature bird in the second or third year's plumage. His tail was nearly all brown but his head was a dirty white mixed with brown. He looked sharply all around him but not down under the tree although I moved about considerably. There are five Eagles here now. I have taken several Thrushes that had small ticks on their faces and most of the feathers of their faces had been scratched off.

On July 10th I took a set of Slate Colored Junco and one of Chestnut-Sided Warbler. The latter with particularly fine markings. I recently took three young Broad Winged Hawks from the nest that had maggots in their ears, as was the case with the Red-Shouldered. The nest was about 35 feet up in a white birch tree. The old birds had from time to time placed a layer of twigs with green leaves upon the nest possibly with the idea of keeping the young up out of the damp nest and dirt. There was nearly four inches of twigs above the place where the birds first nested. While I was at the nest the female came with a small green frog. I found traces of rabbit and the thigh bone of a bird which was large enough to be a partridge. I found a nest of Sparrow Hawks in a bad state. They were in a small place with almost no covering. They had no vermin in their ears but were wet and filthy. All had a crop full and one had about three inches of a green snake hanging out of its mouth.

The Junco nest which I found on July 10th was in a nice situation. There was a stump about 18 inches high covered with a thick covering of moss on which grew what we know as tea leaf or bunch berry plants, (*Cornus Canadensis*.) The nest was between two roots of this stump nearly under it and the vines and plants hid it from view.

Two pairs of Loons stayed here, but the water has remained so high that it was next to impossible to find their nests. Have not seen any young Loons up to this writing, July 11th. I have collected three young Golden-Eyed Ducks. One was taken five days later than the other three. The difference in size showed how rapidly these young grow. The last one I took was in a swampy place full of water on the shore of Tallman's Stream. The female would fly over quacking, then after a while call the ducks off in opposite directions from me. They did not hide like Black or Wood Ducks but were diving all the time and coming up among the bushes just

out of reach. When one chases them and gets nearly up to them they will dive and go back to the place they started from under water.

One set of Yellow-Bellied Sapsuckers I took this year was fresh and contained four eggs. The birds found a cavity already excavated and went right on laying and in less than three weeks had young partly fledged. The first set of Blackburnian Warbler I took was found by watching the female. She would light in a thick bush then fly off a long distance, coming back soon. I thought it a sure find so I left it and came back in a week's time only to find no nest on the bough but on striking a small tree nearby the female dropped from the nest to a brush pile and went off. The second nest I found by watching the female as she was flying about in a hurried manner feeding and making quite a lot of noise and ruffling up her breast feathers. I knew she had just come off her nest. After about five minutes she went like a flash straight through the woods. I lost view of her about 30 or 40 yards away. Going to this spot I commenced to strike each tree to jar the bird off. The third tree I struck the bird came out and after dropping about 15 feet went off close to the ground but came very close to me while I was in the tree.

With the Olive-Sided Flycatcher nest which I found I noticed that the male was unusually about 50 to 75 yards from the nesting tree and when I got within 15 or 20 feet of the nest the female flew off but soon came back to the nest. This bird usually dives down some at leaving the nest. This one came so close to me in the tree that I could feel the wind from its wings. The male assists in incubating.

There is not a single Phebe's nest here this year and Cliff Swallows have been scarce. I saw a young Night Heron on the 9th of July but have not seen any young Great Blue Herons as yet.

I found nests of many birds by watching a likely pair. They are usually near the nest just before setting. Everything goes well until the female happens to come near the nest. Then there is trouble. After seeing them drive two or three birds from one tree or particular place on the ground it is very likely that the nest is or will be nearby. This method works best where tree building birds are numerous. The Tree swallow will come down and pick up a white feather and if he has a nest will fly straight to it but if he has no nest will simply take it up into the air and let it float away or perhaps take it to some stump or tree and fasten it there for future use.

As a rule Pileated Woodpeckers are very shy and hard to get a shot at but if one will conceal himself within hearing distance of one of these birds and clap his hand with hollowed palms two or three times with the same regularity that a Woodpecker would if pounding on an old hollow tree you are likely to bring one straight to you. Your only trouble will be that he

will be too near to shoot. This same method works well on some of the smaller species.

Whippoorwills are usually hard to shoot but if one will go fairly close at night and then imitate their notes, the singing bird will come straight to you and almost light on your head. This works best in the early part of the season. Male Woodpeckers do most of the incubating and after the young are hatched they help feed and care for them.

The Red-Start does not show his red colors the first year and the Saw-Wet Owl is fawn colored on the breast, no light mottling until they change their plumage in the fall.

Notes on Some Experiments Made on the Buzzard of Carolina— *Cathartes Aura* and *C. Atratus*

By John Bachman

(FROM ORIGINAL UNDATED MANUSCRIPT)

IN consequence of various opinions having been expressed respecting the habits of the Turkey Buzzard I determined to make a number of experiments, which I intended to direct to the following inquiries:

1. Is there any truth in the opinion expressed by a person who signs himself Maj. Pillaus—that when the Buzzard's eyes are put out he can by placing them under his wing renew them again.
2. What food does the Buzzard prefer—fresh or putrid meat?
3. What are the powers of smell and sight of this bird—whether is he attracted to his food by sight or by the smell?
4. The general habits of the bird?

16th (December) tried some experiments with a small piece of beef—results detailed below.

18th (December) placed a dead Hare which had accidentally been killed into the lower part of my vegetable garden, near which a rat-trap was placed. In the course of the day several Buzzards were attracted by the animal. They flew along with their heads bent first one way then another seeming to look out for food. Several flew past without observing it. Occasionally one would see the object and immediately make a sudden turn, after once or twice passing around they alighted near the meat and three Turkey Buzzards were caught in succession, as well as a Black Vulture—all made their escape on account of the make-up of the springs of the trap. The Black Vulture evidently was the strongest and extricated himself with greatest ease. A few days before a piece of fresh beef not more than an inch in diameter was placed in the trap and it met the eyes of several Vultures who had ingenuity enough to take off the meat without being caught.

That both species of Buzzards eat fresh meat is well known in this part of the United States. The Black Vulture is seen daily about the mar-

ket feeding on every little scrap of meat thrown to him by the butchers—nay he occasionally steps into the market and takes a try at any meet he can lay his bill on. Buzzards also eat Buzzards. Two years ago we were in the habit of shooting these birds who were feeding on those of their own species that had been skinned by the assistant of Mr. Audubon. At the butcher pens the Buzzards eat the offals yet warm from the slaughtered animals.

19th (December.) To-day we added to the Hare of yesterday an English Pheasant that had just been killed by a dog. In a short time the Buzzards came (*Cath. Aura*) and ate greedily. Two were caught in the traps (new ones had been procured.) They were confined in an outhouse for experiments. The eye of one was perforated—the sight was destroyed. It was not restored this evening, and the absurd story of the Buzzards being able to restore a lost eye by placing the head under the wing was proved to be all a farce.

The Black Vultures appeared to be shy. They saw the traps and the strings that confined them. They were easily alarmed, and most of them after taking a good look flew away. Two of them were subsequently shot from the same chimney by Mr. Audubon. During these experiments a Winter Wren (*Troglodytes Europeus*) was seen gliding among the boards and along ditches. It was the first one I ever met in this part of Carolina.

20th December, 1833. This proved a cold and very disagreeable day. Very few Buzzards were seen flying about. Those that we saw of the Black Vulture seemed to fly straight to the butchers' pen for food and almost immediately to return to the woods across Ashley River. In the course of the day another Buzzard (*C. Aura*) was caught in the trap and placed with the other two. The Black Vultures were very shy—alighting near the trap but soon flying off as if alarmed. This morning saw a *C. Aura* feeding on a Black Buzzard that had been shot. He was pulling off the feathers and eating greedily on his meat; two of the Black V. alighted near him, but he seemed hungry and drove them away. Vultures eat their dead companions.

Examined the one whose eye was perforated yesterday, it was not restored and the poor fellow must remain blind in the right eye to prove that Maj. Pillaus either from ignorance or design imposed on the community.

The Buzzards when caught immediately disgorge all they have recently eaten—woe betide the greenhorn that thoughtlessly hugs this darling in his arms.

From experiments made today I am of opinion that the Buzzard only sees small objects—say the size of a fowl—at the distance of about 70 yards, indeed he frequently passes them at a much less distance. One or two flew past at the distance of 20 steps—although to the food yesterday were added

two hawks,—a European Kestrel and a Red-tailed Hawk (*Falco Borealis*). To my mind it is satisfactorily proved: 1st. That a perforated Buzzard's eye cannot be restored. 2nd. That he eats fresh meat, and I think prefers it. 3rd. That he is guided to his prey by sight and not by smell. Whether he possesses the faculty of smelling putrid meat remains to be proved.

21st December, 1833. The last evening we procured a wheelbarrow load of offal from the butcher's pen containing the lights and intestines of animals; to this we added the meat which had been made use of in our experiments during the last three days. A frame was raised over it covered with brushwood. This frame was raised a foot from the ground so as to permit the air to circulate freely, believing as there was only an obstruction to the sight and not to the smell the Buzzard would, if they possessed the power of smelling, alight in the neighborhood or try to get at the offal.

In the course of the morning we observed at least a hundred Buzzards pursuing as usual their search after food; and passing very near the place where the offal had been placed. We watched their motions, and there was no check in their flight and not the slightest appearance of their having scented the meat; not one alighted near. They all passed over as if there was no food for them. About one o'clock we took out a small piece of meat from the parcel which was concealed and placed it on the ground, about thirty feet from the place. In a few moments the Buzzards saw it. We caught in succession five in our traps, three of which escaped. In the course of an hour eight alighted around this bait. They greedily ate the meat, but although they were so near to the large quantity that would have satisfied the hunger of all fifty of their tribe, not one was attracted by it nor noticed it in any way. This was a rainy, windy day. The Buzzards were much on the wing. Great numbers were flying about in every direction. We observed that in such weather, particularly when flying against the wind, they could not see a small object far, seldom beyond seventy yards. As far as these experiments have gone they are all in favor of the Buzzard seeking his food by sight, and as yet we have not discovered that he possesses any smell.

The Turkey Buzzards are more easily caught in a rat-trap than the Black Vultures, although to day we had one of the latter in the trap that had been only caught by the toes and escaped.

22nd December. This was Sunday. No experiments were tried. The Buzzards, however, did not find out the offal.

23rd. The meat is becoming offensive, and although the Buzzards have not smelt it the dogs have. One of them went to the place and dragged out an entrail which the Buzzards soon after saw and several came down to it. They were driven away and the same bait placed near the spot where

the quantity lay concealed. This was soon devoured, but the other was not found, a proof that dogs smell better than Buzzards. Mr. Audubon is this morning painting a sheep under the impression that the Buzzards will come to the painting. The painting was finished in less than an hour. It was a coarse affair on a canvas painted in oil. It represented the animal cut open with his entrails hanging out. In its wet state it was placed in the garden on the ground. The day was rainy and very disagreeable, and but few Buzzards were flying. The first one (*C. Aura*) that made his appearance saw the painting when he was about seventy yards off, gave a sudden turn and alighted near it, walked all around the painting, seemed much disappointed. Flew off to a post nearby and here he was again attracted by the painting. He once more returned, gave it a careful examination and then flew off. Here is a positive proof that our Vultures are attracted to their food by sight and not by smell. All this while there was a wheelbarrow full of putrid meat within fifteen steps of him, and in a situation where effluvium was freely communicated to all around, so as to attract dogs and become disagreeable to man, but the Buzzards did not find it out.

To-day we fed our confined Buzzards. They were very hungry and ate greedily within a few steps of us. We intend making some experiments with them.

24th December. After much rainy and disagreeable weather the rain has ceased and the blessed sun has once more appeared. We tried the painting and soon brought one to it, being now satisfied that they would come to a picture, of course, by sight. I proposed trying an experiment which I believed would be conclusive. We placed the dead Hare and Pheasant together with the entrails of a sheep under an osnaburg cloth, through which the effluvium might easily penetrate, but which would not permit the Buzzards to see the meat. On the top of this we fastened some fresh meat by driving a stick through it. We also placed the painting near as an additional attraction. In a short time we had the pleasure of seeing eight birds alight, several of each kind. They immediately walked up to the meat and in a little time devoured it. All this while they were standing on the canvas which covered a quantity of putrid meat. They in picking the meat above it must have had their bills within an eighth of an inch of the parcel below, but they did not perceive it. If they had the sense of smelling they would have tugged at the cloth that contained it, but no they were still hungry. They walked all about. One of them, a Black Vulture, gave a few pulls at the painting with his bill. They could find nothing more to eat and all of them successively flew off. This experiment was made in the presence of four who all were perfectly satisfied that the Buzzards cannot smell. About one o'clock we repeated the experiment. Two Buzzards (*C. Aura*) came. One pulled off a piece of meat which was in sight, flew off with it in his bill, the other chased him. They soon returned, ate up the

rest and looked for more. One of them walked within two feet of the parcel of meat which had been placed under a brush heap. He did not perceive it, and finally flew away. We now took away the painting, notwithstanding the effluvium that is continually attracting the neighboring dogs no Buzzards have since alighted in the garden.

25th December. This was Christmas Day. No experiments were made. The offal, however, was left in the same place, and although the Buzzards were as usual flying over not one alighted in the garden. In the prosecution of our experiments we discovered that the powers of sight in our Vultures were certainly not as great as those possessed by the Falcon tribe. A dead fowl was discovered by them at a distance of seventy or eighty yards, a sheep at 100 or 120 yards. These, however, were stationary objects, laying on the ground. One of their own species, however, flying in the air is no doubt observed at a much greater distance. It may easily be conceived why the sight of the Vulture is less acute than that of Hawks and Eagles. The latter prey upon birds, quadrupeds, etc., for which they have to hunt. The former feed on dead animals, birds and reptiles, and frequently those of large size which it requires no extraordinary powers of vision to discover.

It may next be inquired for what purpose are the wide nostrils and olfactory nerves given to Vultures if they are not intended to enable them to procure their food. To this I answer that the olfactory nerves of our Vultures are not larger than those of many other birds and their nostrils are less even than that of the Whooping Crane (*Grus Americana*) which discovers its food, as I strongly suspect every other bird does, by the eye alone. Several heads of Vultures are now in the hands of individuals connected with our medical colleges for dissection. A satisfactory elucidation of this subject will require time, patience and an extensive knowledge of comparative anatomy in regard to the various species of birds. The result of these investigations will probably be communicated to the public in the course of a few months.

An Essay on the Migration of the Birds of North America

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By John Bachman (Charleston, S. C.)

THE migration of birds has been a subject of great interest to Naturalists for ages past. The mysterious appearance and disappearance of many species at different periods of the year, the circumstance of many of them having never been seen in their migrations, the remote situation to which they retire, even beyond the knowledge of man. The accounts which have from time to time been published of the Swallows having been found in great numbers in caves and hollow trees, in lakes and ponds, of the common Rail or Sora (*Rallus carolinus*) having been found in the gutters and hollow banks, the sudden appearance of some birds in the spring after one or two days of warm weather, and their equally sudden disappearance on the first cold day, all have conduced to create many vague and superstitious notions in the minds of the uninformed, and have often left the intelligent student of nature in perplexity and doubt.

Some have supposed that birds, like some animals, are capable from their internal structure of becoming dormant during the period of cold weather, and hence they lend a willing ear to the accounts published of birds having been found concealed in great numbers in caverns, the hollows of decayed trees, recesses of old buildings and other secluded situations; whilst others have contended that they were preserved under the water beneath the mud during the winter.

Amidst such contradictory sentiments on a subject on which the most intelligent Naturalists are not yet agreed, there is a wide field open for inquiry and observation. The works of God amidst the wonders of nature are always worthy of investigation. If He has given to the birds of the air instincts which cannot be equaled by the boasted reason of man; if He has communicated to them some mysterious properties which have hitherto baffled the researches and wisdom of the wise, may it not at least be well for us to record the facts so that although we may not be able to explain these

mysteries of nature we may be humble under a sense of our inferiority and adore the wisdom of God.

I am not aware that any one in our country has as yet written, beyond a few paragraphs, on the migration of birds. Probably it may have been considered a speculation not sufficiently important to merit the labor and research which are necessary to produce a satisfactory result in such an intricate subject. Having possessed opportunities in three very distinct portions of America of witnessing these migrations and believing that every individual should communicate to society the information he may possess, however imperfect and on subjects ever so humble, I propose this evening to call your attention to the subject of the migration of the birds of North America.

When the period of migration arrives birds evidence an uncontrollable restlessness of disposition as if conscious that an important undertaking was at hand. The Snow and Canada Geese (*Anser hyperborea* and *canadensis*) which I have had for some years in a state of domestication, although in other respects perfectly tame, make constant efforts on the return of every spring to obey the impulse of nature and take their departure for the North. Although a joint from a wing of each has been removed, yet they make attempts at flying, and when at this season they are enabled to escape from their enclosure they hurry off in a northern direction as if determined to make their long journey on foot. Wilson gives a well authenticated anecdote of a female wild Goose having been domesticated by Mr. Platt of Long Island, which after flying off on the following spring returned in the autumn with three of its comrades or gang, and the birds were all living several years afterwards. I have preserved in an Aviary Robins, Finches and Orioles that had been procured when young at the North, and no sooner did the spring, the time of migration, arrive than they exhibited by their constant fluttering a disposition to escape, and the moment this was affected they flew off—not to the South or West, but as directly in the line of migration as if guided by a compass. These are facts of which the humblest individual may inform himself, but which neither our wisdom or philosophy can explain.

That there is something very mysterious in that instinct which teaches birds at particular seasons of the year to leave their native haunts—to take wing and pursue their onward course, sometimes across arms of the Sea, and in most cases over rivers, mountains and forests into far distant countries none can deny. That many of these should commence their migrations in summer and thus anticipate the cold, and that others should return from southern climes before the snows of the north have disappeared, and whilst winter still lingers in the lap of spring, will probably ever remain a subject of doubt and perplexity to the inquiring mind.

Among animals and birds we often discover a train of actions, all cal-

culated to produce a certain effect by the agency of certain means without any of that chain of thought which is an essential quality of reason. This is called instinct, a term which has given rise to various theories, which as it would require volumes to explain, and would even then be unsatisfactory, I shall pass over with a few remarks in explanation of the term.

When certain species of birds at their first season build all of their nests in a similar form, and of similar materials without having seen any others or had any experience themselves—this may be called instinct. On the other hand, when man guards against danger or makes provision for the wants of life—or seeks relief from diseases by the application of medicines, he acts from reason. He is instructed by the experience of the past. When birds at certain seasons of the year change the climate in anticipation of the cold or heat, they act from instinct; because to many of them it is their first migration, and as many of them migrate not in flocks, but singly, no experience can aid them. On the other hand, when man makes provision for the changes of seasons and climate he acts from reason—he is instructed by his own experience or the experience of others.

Whatever difficulties there may be in accounting for that mysterious principle in birds called instinct and which induces them at certain seasons to change their abode, and again after an interval of six months to return to the neighborhood where they reared their young a year before. The facts of these migrations are incontrovertible, and the reasons why they take place are becoming more and more apparent. Those birds that migrate are from the very structure of their bodies admirably adapted to rapid and continued flight. Their feathers are so light that they float in the atmosphere for many hours without any artificial support. The tubes of these feathers are hollow, the bones are specifically lighter than those of quadrupeds; are also hollow, and instead of marrow are filled with air. They are furnished with lungs of unusually large size, adhering to the ribs provided with aerial sacs insinuating themselves into the abdomen. These added to the great length and strength of wing enables them with ease and rapidity to navigate the air, to elevate themselves above the clouds and pass from one country and climate to another.

We perceive then, from the very structure of birds that they are admirably formed for rapid flight and migration. From a variety of accurate experiments which have been made at different periods it appears that the Hawk, the wild Pigeon (*Columba mygratoria*) and several species of wild Ducks fly at the rate of a mile in a minute and a half. This is at the rate of 48 miles an hour, 576 between the rising and setting of the sun and 1152 miles in 24 hours. This would enable birds to pass from Charleston to our distant northern settlements in Canada in a single day, and this easily accounts for the circumstance that Geese, Ducks and Pigeons have been taken

in the northern and eastern states with undigested rice in their crops, which must have been picked up in the rice fields of Carolina or Georgia but the day before.

There is a well attested account of a Falcon from the Canary Islands, sent to the Duke of Lerina, which returned from Andalusia to the Island of Teneriffe in sixteen hours, which is a passage of 750 miles. The story of the Falcon of Henry the Second, is well known, which, pursuing with eagerness, one of the small species of Bustards at Fontainebleau was taken the following day at Malta and recognized by the ring which she bore. Swallows fly at the rate of a mile a minute, which would be 1440 in 24 hours. That many birds continue their migrations by night as well as by day, and are thus enabled to make an additional progress, may be easily ascertained from their notes which we often hear by night in autumn and spring (the seasons of their migrations). The cries of Geese, Cranes and some species of land birds are distinctly heard, and others fly silently. Wild Pigeons are frequently seen in the higher atmosphere at early dawn. They fly higher by night than by day, and thus experience less inconvenience from darkness. The great Whooping Crane scarcely ever pauses in his migrations to rest in the middle states. I have heard his hoarse notes as he was passing over the highest mountains of the Allegany, but he was always too high to be seen by the naked eye. This bird seems to take wing from his usual winter retreats in the South, ascends into the higher regions of the air and halts not till he arrives at his breeding places in or near the polar regions. There are very few birds that do not migrate, either on account of food or climate.

The observations of Capts. Parry and Franklin, of Dr. Richardson and their associates, who wintered in the polar regions, proves that birds which never visit temperate climates, and which naturalists formerly supposed were wholly confined to the Arctic circle, leave the intensely cold regions of the north in winter, and migrate southerly to the distance of many hundred miles. These adventurous explorers of the polar regions speak of the dreariness and desolation of those countries in the winter, and almost total absence of animal life. During the whole winter spent at Melville Island a pair of Ravens (*Corvus corax*) alone were seen, and these they state had frequently a white ring around their necks, caused by the accumulated encrustments of their own breath, and giving them a very singular appearance. The Snow Buntings (*Emberiza nivalis*) the Ptarmigan (*Tetrao lagopus*) and two other species of Arctic Grouse, were their earliest visitants in the spring; and these birds are in Europe and in the farthest northern settlements of our continent found only in the coldest winters, and on the highest mountains. Still we perceive that even they find limits beyond which they cannot live in winter.

Birds migrate either to avoid the cold in winter, or to find more con-

genial or more abundant food, and I am induced to believe that in general the latter is a stronger principle than the former. The small number that remains amidst the snows of the North are either carnivorous, such as a few of the Owls, Hawks, the Ravens (*Corvus corax*), the Canada Jay (*Corvus canadensis*) and the Northern Shrike (*Lanius borealis*). These pick up a scanty subsistence by feeding on a few of the smaller birds that remain; or by following the hunters and the wolves, and supporting life by picking the bones of the animals which these have left, or they are composed of those birds that feed on the buds of trees, such as the Grouse, that live on the buds of the Birch (*Betula*), Poplar (*Populus*), and several species of Willow (*Salix*); or those that feed on the seed of the Pine and Spruce, *Abies*, as the Cross-bill (*Curvirostra*) and Pine Grosbeak (*Pyrrhula enucleator*); or they are birds that are able to find subsistence on the seeds of plants that are protruded above the snow, or on the seeds of grass found in the barn-yards and haystacks of the farmer, such as a few species of the Sparrow. But those immense numbers of birds that feed on insects and worms all migrate to those countries where they are abundantly supplied with this kind of food. These are the Swallows (*Hirundo*), the Nighthawks, Whip-poor-wills (*Caprimulgus*), the Tanagers (*Tangara*), the Flycatchers (*Muscicapa*) and Warblers (*Sylvia*). To them migration is essential to the support of life. The insects at that season disappear, the earth is bound in frost or covered with snow, and all the means of subsistence are removed; but long ere this these lively tenants of the air have obeyed the impulse of some mysterious property in their nature and have migrated to more congenial climes. To these may be added all the birds that obtain food from the muddy and moist places of the earth, such as the different species of Curlew (*Numenius*), the Snipes (*Scolopax*) and the Sand Birds (*Tringa*), as well as those Ducks that obtain subsistence from fresh water ponds and rivers. These finding the swamps, brooks and shores frozen over migrate from the North to milder regions where they can procure suitable food.

Those birds that migrate but partially and spend their winters in the northern states, though in a milder temperature than their places of summer resort, such as the Eagles, Hawks (*Falco*), owls (*Strix*) and Grouse (*Tetrao*), are enveloped in a warm, thick and downy plumage which in most of the species extends even over the legs and toes. Other birds are exposed to the water as well as the cold, such as some species of wild Ducks (*Anas*), Gulls (*Larus*), Petrels (*Pterodroma*) and Puffins (*Puffinus*). These gaining a subsistence from the Sea are not obliged to migrate on account of food. In addition to their warmth of covering which shelters them from the cold, they are supplied with sacs containing an oleagenous substance with which they regularly imbricate their feathers, which renders them impervious to moisture. Whilst floating on the surface of the water they often

draw up their feet beneath their warm covering of down, and thus every part of the body is protected against the influences of the cold. There is another circumstance with regard to the capacity of birds to endure cold, which is not generally taken into consideration—it is the high degree of temperature in birds. The temperature of the human body is generally placed at 97 or 98 degrees of Fahrenheit. That of animals two or three degrees higher, and that of birds as high as 106 making a difference of eight or nine degrees between bird and man. A large mass of air penetrates the lungs, and all the aerial sacs and canals of the bird, increasing the actions of the heart and propelling the tide of circulation with great rapidity. The pulsations in birds follow each other in such quick succession that they can scarcely be counted. The heat of their bodies being much greater than that of animals they are thus enabled to bear with ease the rigors of cold in the distant North, and in the elevated regions of the air.

Some birds migrate only from one extreme of our Union to the other. Thus many species that go under the name of Sparrows that breed at the North, with the exception of three: the Snow Bunting (*Emberiza nivalis*), the Tree Sparrow (*Fringilla arborea*), and the White-crowned Bunting (*Fringilla leucophryso*) spend their winters in tens of thousands in Carolina. The Meadow Lark (*Sturnus ludovicianus*) and the Brown Lark (*Authus spuroletta*) which find the snows of the North covering the earth and hiding their favorite food, retreat before it and seek sustenance in our Southern States. Other families of birds, such as feed on ripe berries that abound in the winter, also remain with us. These are the Robins (*Turdus migratoria*), the Wax Bird (*Bombycilla americana*) and the Bluebird (*Saxicola sialis*), which feed on the berries of the Tupelo (*Nissa aquatica*), the Holly (*Ilex opaca*), the Capena (*Ilex capena*) and the small black or red berries of several species of Smilax and Prinos. Yellow-crowned Warbler (*Sylvia coronata*) is the only Sylvia out of fifty species inhabiting the United States that remains with us in the winter, and even this bird could not find a subsistence among us were it not that it almost changes its nature in winter, and lives on the berries of the wild Myrtle (*Myrica sibirera*). This is always the case with the only Flycatcher that winters in Carolina. The Pewee fattens on the seed of our imported tallow-tree, (*Stillingia sebifera*).

It is doubtful whether there are any birds that never migrate in the changes of the seasons. Hawks and Crows are infinitely more abundant in the North in summer than in winter, the greatest number of them retreat southerly. Those of the South may at the same time proceed still farther toward the equinox. Our Cardinal Grosbeaks (*Fringilla cardinalis*) are found in New Jersey during summer, and abundant in Virginia; hence the name of Virginia Nightingale, and yet during winter very few remain in those states. In the meantime, our own number of birds of this species

does not increase at this season of the year, and it is very probable that those who have been raised among us remain still farther to the South. As our summer birds, such as the Blue Grosbeak (*Fringilla coerulea*), the Painted Bunting (*Fringilla ciris*) and our Warblers and Flycatchers abandon us toward the close of autumn, we receive at the same time fresh supplies of feathered hordes from Canada and the northern portions of the United States. Many of these remain in our mild climate of Carlolina during the whole winter. Some of them, such as the Yellow-bird (*Fringilla tristis*), the Siskin (*Fringilla pinus*), the Purple Finch (*Fringilla purpurea*) and the Woodcock only approach our southern climates in proportion as they are pursued by the cold. These seem to beg their subsistence on their passage, and linger among us no longer than their necessities require.

When our winter birds return to their breeding places in the North, they are in the early period of spring replaced by analogous species from the Tropics, which resort to the mild climate of South Carolina; and principally along our maritime districts to rear their young. Of the many species of Northern Hawks the Red-shouldered (*Falco lineatus*.) one of the most common species in the United States, is the only one that remains in our low country during summer.

In the meantime, several interesting species from the South arrive among us, of gentler and less destructive habits, feeding principally on insects and lizards. The beautiful Swallow-tailed Hawk (*Falco furcatus*), a Mexican species, which seems to be ever on the wing, builds its nest on the highest trees of our forest. The Mississippi Kite (*Falco plumbeno*.) with similar habits, and also feeding whilst on the wing, is found occasionally in groups of four or five soaring together high in the air. This bird is so gentle when alighted that it generally suffers you to walk under the tree without being disturbed. The Black-winged Hawk, the (*Falco dispar*) is another of our number. It bears so strong a resemblance to an Asiatic Hawk (*Falco melanapheru*s.) that although it is described as a distinct species, I have never been able to detect the slightest difference. It is occasionally met with us as early as the beginning of February, and breeds on a few of our Islands along our Sea-board. This species it has hitherto been supposed never migrated north of Florida. When the Gannets (*Sula vapana lacep.*) leave us for their northern rocks, we are visited by the two species of Pelicans (*Pelicanus onocratalus*, L. and *P. fuscus*, L.) and by immense flocks of the Wood Ibis (*Tantalus loculator*, L.). The latter commence regular systematic attacks on the fish in our ponds and rice fields. First muddying the water and then killing ten times as many as they can consume, leaving a rich repast for the Alligator. Strange as it may appear in birds so large and numerous, their nests have never been found. No sooner do the Virginia Rail (*Rallas virginianus*, L.) and the Sora (*R. carolinus*) leave us than their place is supplied by

two species of a kindred Genera, the purple and common Gallinula (*Gallinula martinica* and *G. chloropus*). The latter is found breeding in nearly all the back waters of our rice fields, the former is seen but sparingly, and the large family of northern Finches is succeeded by several interesting species; among the most beautiful of which are the Nonpareil or Painted Bunting, and the Blue Grosbeak. Thus by a wise and benevolent provision of Providence the varying seasons bring along with them a succession of the feathered tribe, that either contribute to our sustenance or minister to our pleasures.

Whilst some of our northern birds make Carolina their southern limit in the winter, there are others that make it their northern boundary beyond which they dare not go at that season. Thus the Catbird (*Turdus felivox*), the White-eyed Flycatcher (*Muscicapa cantatrix*), the Green Swallow (*Hirundo bicolor*) and several other species appear among us in small numbers after one or two warm days in winter. A few of these linger along our Sea-board in sheltered situations during the whole of the winter, and they are found in great abundance in Florida and Mexico. The whole Crane and Heron family, the latter composed of twelve American species all spend their winters south of Carolina, with the exception of a few stragglers from among the great Blue Heron (*Ardea herodias*), a very small number of the White Heron (*Ardea alba*) and a few of the young of the Whooping Crane (*Grus americana*), yet all of these species of birds are numerous in Florida during the whole winter.

The following Herons breed in Carolina and all of them in communities with the exception of the Least Bittern (*Ardea exilis*) (a rare species, which conceals its nest among the rushes in fresh water ponds, where it deposits three nearly white eggs), Great Heron (*Ardea herodias*), Great White Heron (*A. lutea*), Snowy Heron (*A. candidissima*), Louisiana Heron (*A. ludovicianae*), Yellow-crowned Heron (*A. violacea*), Night Heron (*A. nycticorax*), Blue Crane or Heron (*A. coerulea*). The young of this species are white till they are two years old. Green Heron (*A. virescens*) and Least Bittern (*A. exilis*.) The American Bittern (*A. minor*) remains in our marshes during the spring till about the 12th of May, when it retires to its breeding places in the farthest North. The *Ardea Pealei* of Bonaparte, as has been ascertained by Audubon, is the young of the *Ardea rufescens* of Buffon. Having had living specimens in my possession for some time I am enabled to state that the downy feathers of the young whilst in the nest are brown. The birds then continue white till the second year, when they resume a rufescent color. They are found breeding in great numbers on the islands of the southern extremity of Florida. In the same places are also found the newly discovered Heron, the largest of all our American species, which Audubon describes as *Ardea accedentalis*. The Brown Crane (*Grus canadensis* of Tamm.

and Bonaparte) is undoubtedly the young of the great Whooping Crane, as I have ascertained in a pair kept in confinement, which either in the second or third year of their age assumed the form and plumage of the adult bird, the *Grus Americana*.

Many birds make occasional and partial migrations only to procure a supply of food; thus the common Partridge (*Perdix virginiana*) in seasons when there is a scarcity of grain in New Jersey crosses the Delaware River into Pennsylvania. The same has been observed along the Susquehanna and Hudson. The flight of these birds is so heavy that they are seldom able to reach the opposite shores on the wing, but drop into the water when they are weary and swim across. This is also the case with that most delicious of all birds—the Wild Turkey. Along the Ohio, Missouri and Mississippi Rivers, numbers of these in the seasons of a scarcity of their accustomed food, cross those rivers partly by flying and then by swimming, and in this wet and exhausted state are taken in great numbers, either in the rivers or as they arrive on the opposite shores. The wild Pigeon (*Columba migratoria*) is another of those birds that is supposed to be driven among us only by the extreme cold of the North. This is a mistake. They appear in Carolina only at very long and uncertain intervals. Sometimes they visit us in cold, but frequently in warm winters. I have seen the wild Pigeon in immense flocks in Canada in the coldest winters when the thermometer was below zero. It is to be remarked that the previous autumn had produced an abundance of beech nuts and buckwheat, their favorite food, and that the ground was not covered with snow. It is only when the forests of the West have failed in their usual supply of mast and berries, that the wild Pigeons come among us to claim a share of the acorns, beech nuts and berries of our woods, and the refuse grains scattered over our rice fields.

Whether the occasional changes in the migrations of the birds of our Continent may not in the course of time introduce among us some species of birds from the South and West, that are not now found here, is not improbable. A large number of the feathered race follow the improvements of civilized man. No sooner does cultivation commence than many birds which were unknown in the forest around him are seen in his fields and orchard. A new species of grain attracts the graminivorous bird, a particular plant or tree on which certain caterpillars or insects feed invites the *Sylviæ*, *Vireos*, and *Muscicapas*, and the tubular flowers of the West Indies transplanted in the soil of Florida, are already beginning to attract some of the many species of Hummingbirds of the South. In the days of Wilson (one of the most observing of our American ornithologists) the great Carolina Wren (*Troglodytes ludovicianus*) and the Pine-creeping Warbler (*Sylvia pinus*) together with several other species were unknown in the Northern

States (where I sought for them for many years in vain.) They have now extended their summer migrations as far North, at least, as Boston.

The Cliff Swallow, a Mexican species, was first seen on the banks of the Ohio in 1815. These birds excited much interest from the peculiar structure of their nests, built of mud and clustered together resembling a bunch of gourds. From year to year they continued to increase, and advance eastwardly in their migrations till they have now extended across the Continent as far as Canada and Maine.

The Olive-sided Flycatcher (*Muscicapa cooperi*) has but recently made its appearance in the North, and on the Mountains of Virginia, and in the latter situations the newly-described Bewick's Wren of Audubon (*Troglodytes Bewickii*) has supplanted all the other species of that Genus. The Forked-tailed Flycatcher (*Muscicapa savana*, *Bonap.*) has only within a few years commenced leaving the tropical wilds of Guiana, and a few stray birds of that species are almost annually seen in the middle states. The Solitary Flycatcher (*Vireo solitarius*, *Vieill*) which was so rare with us ten or twelve years ago that scarcely a bird of that species could be found in a year, has of late become so abundant that in the month of February five or six can be counted in particular situations near our city in a single day, and their sweet notes from a considerable addition to the concerts of our feathered choir. The Orange-crowned Warbler (*Sylvia celata*) so long confined to the far West and the Orange groves of Florida, has become equally common in our immediate neighborhood. The Pectoral Sandpiper (*Pelidna pectoralis*) and the Long-legged Sandpiper (*Tringa himantopus*, *Bonap*), which were formerly so exceedingly rare that Wilson knew nothing of their existence, are now found every summer in small numbers along our Seacoast. It may not be unworthy of remark in this place and in confirmation of the views now advanced that no less than eight or nine species of birds have recently been discovered in the neighborhood of this City. A few of these may have long existed in the country and escaped the researches of former Naturalists, but I am under an impression that some may have but recently come among us. From specimens in various stages of plumage which I possess of the Long-legged Sandpiper I am disposed to believe that Swainson and Richardson in their *Fauna Boreali-Americana* have been deceived by the variations in the plnmage and size to which this bird is subject, and have described it three times under the names of *Tringa himantopus*, *T. Audubonii* and *T. Douglassii*. From hence we may easily perceive that after all the additions that have been made to our American Ornithology by Wilson, Bonaparte, Cooper, Nuttall, Richardson and especially by the indefatigable Audubon, the field still remains open to the investigation of the student of nature and promises a rich reward.

There is one singularity in the migration of American birds that is as

yet involved in some obscurity. A vast number of northern Warblers and Flycatchers do not pass over the low countries of Carolina in their migrations, and the closest observers have not been able to find a single specimen of many species that are abundant in the North and that all migrate southerly in autumn. It is possible that migratory birds pass southerly in two immense channels, one leading from Hatteras or some of our Capes a little farther south, and thus across the Gulf of Mexico to the West India Islands, where they spend the period of our winter in immense numbers. They are often met at Sea during the periods of their migrations and are frequently known to light on the rigging of vessels where they rest for an hour or two, and then again pursue their onward course. The other path of migration, and probably the most common, to which I referred, is along the Allegany and that vast chain of Mountains which extend through the whole interior of our country. I infer this to be the case, since the Rose-breasted Grosbeak, the Baltimore Oriole, the Scarlet Tanager and a number of species of Warblers, that seldom visit the maritime districts of Carolina, are found to pass along the Mountains of Carolina and through the states of Louisiana, Mississippi and Arkansas. Some of these birds remain in Mexico, some enter within the Tropics and others in all probability pass beyond them in order to find a climate similar to that which they have left. It has recently been ascertained that some birds that are found in the north of Europe, and have hitherto not been known to exist in America, migrate from the Polar regions along the Rocky Mountains into Mexico and return by the same way in their spring migrations. The Magpie (*Corvus pica*), and the Bohemian Wax-wing (*Bombycilla garrula*) are of that number. Several other birds peculiar to the American Continent never visit the cultivated districts of the United States, but take the chain of the Rocky Mountains in their annual migrations. Among these are the *Cinclus mexicanus*, the Evening Grosbeak (*Fringilla vespertina*), Clark's Crow (*Corvus columbianus*). The Columbia Jay, a most splendid bird figured by Audubon, nearly rivalling in beauty the Bird of Paradise.

The spotted Thrush of Latham (*Turdus naevus*), the Arctic Bluebird (*Erythaca arctica*), the *Emberiza picta*, and the saffron-headed Troupial (*Icterus xanthocephalus*) are also of this number.

The course of migration of American birds is generally from North to South, varying somewhat so as to follow the range of mountains and the course of rivers. Those only that breed in the Arctic circle visit both Continents. It is computed that out of about 450 species already known in North America only twenty-seven land, and thirty-one water birds are natives of both Continents. Consequently 342 species are peculiar to our Continent. The land birds that visit Europe are composed of Eagles, Hawks, Owls and a few other species possessing great strength of wing, and

warmth of covering, enabling them to migrate with ease and to bear the rigour of the Polar regions. - The water birds are either composed of Ducks, which breeding far North are enabled to reach the cold regions of Norway and Russia and visit the shores of Europe; or they are of the Gull, Tern and Petrel species which find sustenance everywhere on the bosom of the ocean, and may, therefore, with great ease navigate the widest seas. Still it will be observed that the number of birds that migrate from one Continent to another is very small, and I am under an impression that these migrations take place but seldom. Such is also the case with our animals, of which very few are found on the Eastern Continent. In fact, our whole kingdom of nature, not even excepting the insects and plants, presents peculiarities which well entitle it to the name given it by its first discoverers of "the New World." Whether many of our migratory birds that leave us early in the season may not pass beyond the tropics and retire to latitudes in the Southern hemisphere of the same temperature with that which they left, is a subject that remains for the investigation of future naturalists. Why may they not take advantage of the reversion of the seasons and there rear a second brood. Even admitting that our birds may not migrate to the Southern hemisphere, it is possible that some of the species may breed in two distinct portions of North America. The Stork after it leaves Europe is known to raise another brood in Africa. The purple Martin which is found in our whole country during summer, as far as the 60th degree of north latitude, is known to breed in South America during our season of winter, and this is also the case with several of our rarest *Sylvias*.

Audubon found the White-headed Eagle (*Falco leucocephalus*) and the Fish Hawk (*F. halietos*) having nests with their young full-fledged, and able to fly in the month of November in Florida. The Barn Owl (*Strix flammea*) lays its eggs in the unoccupied buildings of Charleston in November, and I last year had a full-grown young bird of the great Horned Owl (*Strix virginiana*) sent me on the 3rd of December, which had been taken near this City. Now this is a season when our northern countries are locked up in frost and snow, and it is not improbable that many of these birds following the opening of spring may raise a second brood in our more northern climates. The Rail (or Sora, as it is called in Virginia) and the Swallows have occasioned more speculation, and created more superstitious ideas with regard to their winter residence, than any other of our American birds. The erroneous notions with regard to the Rail have probably arisen from the sudden manner in which it appears and disappears in the middle states, and the erroneous and unphilosophical notions with regard to the Swallows have originated in Europe; and from there been transmitted to our own country.

Rails after having been absent during the whole summer from the middle states, suddenly make their appearance early in August, in immense

numbers in the Delaware, Schuylkill and James Rivers. In a single night their clamorous voices are heard in tens of thousands along those reedy shores where but the day before not one could be found. Here they remain till about the middle of October, when all of a sudden their well known cackle ceases, and in the places where the day before many hundreds were seen not a solitary one remains. They seem so heavy of flight that they are often taken by hand. Hence the oft repeated inquiry whence cometh and whither goeth the Rail or Sora. Many believe that they are scarcely capable of flight, and must find some retreat in hollow banks, or perhaps, the ice or mud. The truth is, these birds migrate altogether by night, and like the Woodcock and other kindred species, fly admirably in the dark. They breed very far North. An intelligent Indian trader informed me that he had found great numbers of their nests whilst hunting for the eggs of the Wild Goose (*Anser canadensis*) along the reedy marshes of the northern lakes. It is not generally known that when these birds leave the Middle States they appear in the rice fields and marshes of Carolina, where they remain a short time before they migrate still farther South, and in the spring again visit us as they are passing on to their northern breeding places. There is then nothing in the migration of the Rail that cannot be accounted for on the principles of nature.

All the absurd theories with regard to the hibernation of Swallows have originated from the habits of a few species inhabiting our country and Europe. The Chimney Swallow (*Hirundo rustica*) resembling our Barn Swallow (*Hirundo rufa*) in everything but its habit of building in chimneys, so perfectly that they cannot be distinguished from each other, and the Bank Swallow (*Hirundo riparia*), which is also a native of our country, and our Chimney Swallow (*Cypselus pelasgius*), have occasionally been found in holes on the banks of rivers, in the hollows of decayed trees or in the recesses of old buildings or chimneys, clinging together in great numbers all in a torpid state. Hence it was asserted that these were their winter retreats, and that here they remained in a state of torpidity from the cold of autumn to the sunny days of spring. This doctrine has been espoused by a number of intelligent naturalists of Europe from the amiable and observing White of Selburne, even to the great Cuvier, who makes use of the following language: "Some birds retire into remote places, to some desert cave, some savage rock or ancient fortress." He evidently could have had no opportunities for a satisfactory examination. Dr. Good has also asserted of the Chaffinch of Sweden (*Fringilla coelebs*) that many of the males indulge in a profound sleep in Sweden while the females migrate to Holland towards the winter and duly return to them in the spring. From careful dissections (the details of which it is unnecessary to give here) it has been ascertained that from the internal structure of Swallows (and the same may be said of

all birds) it is impossible for them to live beyond a day or two in a torpid state. In this declaration I am supported by the dissections of the celebrated John Hunter. I have seen the American Chimney Swallow, as well as the Rail, placed under the water to try the experiment whether they could exist in that element, and they have invariably been drowned in a few minutes, and no warmth or electricity could afterwards revive them. The circumstance of the Swallows drinking from brooks and rivers while they are on the wing, and of picking up flies and insects whilst skimming the surface of the water, has no doubt given rise to the deception in persons supposing they had seen them going under the water in winter retreat. When birds of this species have been found in nearly a dormant state, it was either in the autumn or early in the spring, generally the latter, these are the seasons of their migration. At night they sought these retreats as usual to sleep; here they were overtaken by a cold change in the atmosphere, and here they would have died in a very short time if the weather had not become milder. These birds have never been found in this situation in winter, besides our senses can satisfy us where the Swallows spend their winters. Of the six species of Swallow that inhabit the United States all of them but the Cliff Swallow (*Hirundo fulva*), which has but recently made its appearance in the country, are seen in thousands performing their annual migrations along the Emizon and even the very streets of our city. The green Swallow (*Hirundo bicolor*) is found in Florida during the coldest weather of that country, and was during the last winter, 1832, seen every day, with the exception of about two weeks, in considerable numbers in the neighborhood of Charleston. The Barn Swallow and Purple Martin (*H. purpurea*) leave us earlier and return later. The Chimney Swallow follows last in the train on its return from the South, as it is the first to leave us in autumn. Thus we perceive that there is nothing mysterious, nothing unnatural in the migrations of the Swallow.

The manner in which birds perform their migrations is also deserving of notice. At the approach of autumn, when the cold is beginning to drive the insects to their winter retreats, when the earth begins everywhere to present the image of desolation and death, when the animals are preparing for themselves a shelter from the cold; it is then, and sometimes a few weeks earlier (as if in anticipation of this season) that birds assemble frequently in troops to set out on their annual aerial voyage to Southern climes. The young in most species instinctively herd together, as if disdaining to inquire the path of migration from the old. Some, taught from the instinct of nature which way to bend their course, depart singly and make their long and weary journey alone. Others go in straggling flocks. Sometimes you see the air almost darkened with the Swallows and Nighthawks (*Capurnalagus Virginianus*), other species crowd into close columns during their flight. This

is particularly the case with the wild Pigeons, the Cow Buntings (*Icterus pecoris*), Wax Birds (*Bombycilla cardenensis*), Blackbirds, the Wild Geese and Ducks, and several species of Tringas or Sandbirds. Some species move slowly and seem only urged along by the cold or by a scarcity of their accustomed food, others pass rapidly and effect their migrations in a very few days. Some flit along the earth's surface and rest here and there, as if to take a glance at the fields, gardens and habitations of man; whilst others mount high in the air and soar almost among the clouds, as if scarcely condescending to cast an eye on the cities and villages, and the puny efforts of their inhabitants, and on the mountains and valleys beneath them. These aerial voyagers by an admirable instinct seize upon a favored moment in which the winds and the weather are fitted for these migrations. They are not carried along by the wind, but are obliged from the construction of their feathers to fly against it. They have a fore-knowledge of frost and snows for weeks before they arrive, and they have a mysterious but sure monitor within them to tell them of the coming of spring. They require no chart and no compass to enable them to navigate the air and pass through the regions of clouds, the thunder and the storm. They arrive at the end of their destined voyage. There in the grove, the forest, the mountain, the field or the garden they find food, shelter and a home prepared by the hand of Providence. There in all probability they re-visit the very neighborhood, and probably build in or near the same tree, or bush or tuft of grass in which the year before they reared their young. This, too, may have been the scene of their infancy and here they may have caroled their earliest song. The disposition of birds to re-visit annually the place where they have once bred is remarkable. A Bluebird that was marked so as to be known, built its nest for ten successive years in a box that had been prepared for the purple Martin. A Pewit (*Muscicapa furca*) has been known to re-visit the same cave for nine successive years. A Robin bred for a still longer time in the same apple tree, and a Red-tailed Hawk (*Falco borealis*), which is distinguished from all others of this species on account of its plumage having accidentally become white, has for the last twelve winters kept possession of a dead pine, in an old field in Colleton District, South Carolina. Whilst many species of birds perform their migrations during the day, a great number travel in the night. The lover of nature who in the seasons of the migrations of birds sees flock after flock passing overhead all day long, or witnesses the Wrens, Bluebirds and Creepers just stopping for a few moments to seize a worm or insect, and then as if impelled by destiny rising again on the wing and urging onward, has also the evidence that they might pass over him at night. He hears unusual sounds in the air. The single sharp note of the Rice-bird repeated all around him is succeeded by the crack of the Snipe resembling the grating of a wheel repeated at long intervals.

The Woodcock (*Scolopax minor*) wheels around him uttering notes like the loud ticking of a watch so rapidly repeated that they cannot be counted. He ascends higher and still higher in the air like the Lark of Europe till he seems to have risen above the clouds, when suddenly his voice is hushed and in zigzag lines he descends rapidly to the earth and alights near the same spot from which he arose. This is repeated for several successive evenings and at early dawn, till suddenly he commences his annual migration and is seen no more. The Yellow-crowned and the Night Herons uttering their hoarse croak as they pass high and rapidly on, and at a still greater distance, like unearthly sounds, are heard the not unmusical cry of the Canada Goose. In the meantime, the Rails, the Owls, Thrushes, Warblers and many other birds glide silently by him like spirits of the air; and without being superstitious there comes over him a sensation of mingled admiration and fear, and he feels the truth of the language of inspiration: great and marvelous are Thy works, Lord God Almighty!

The arrival and departure of birds affords a pretty sure indication of the state of the weather, and the advance of the seasons. Living constantly in the air, and exposed to all its variations, they become either from instinct or habit acquainted with the changes of the atmosphere, with the winds, the weather and the seasons. Captain Parry and Dr. Richardson inform us of the anxiety with which the northern Indians watched the approach of the first bird—the harbinger of spring. On the 12th of April, says Dr. Richardson, the arrival of the Swans, Geese and Ducks gave certain indications of the return of spring. On the 14th a Robin appeared. This bird is considered by the natives as an infallible precursor of warm weather; and Capt. Parry says "the Snow Bunting was the first precursor of spring that appeared. When the well-known notes of the Whip-poor-will is heard, the farmer is reminded that the time for the planting of corn is at hand. The Fish Hawk's return to the rivers of the North is hailed by the fishermen as a proof that the season for the taking of shad has arrived. When the Swallow appears the danger of frost is believed to be over, and the Cuckoo of Europe is hailed by the old and the young as an evidence of the return of spring. And if we have ever admired the beautiful sentiment of the Poet

"Sweet bird, thy bower is ever green
Thy sky is ever clear;
Thou hast no sorrow in thy song
No winter in thy year;"

the inhabitants of the middle and northern states of our country feel equally interested and pleased when they hear the soft and melodious notes of the Bluebird, the Robin and the Wood Thrush (*Turdus mustalinus*) reminding them that 'The winter it past and gone, and that the time of the singing of birds has come.'

Previons to a storm the birds give indication of its approach. Our Vultures in very great numbers rise in circles till they are almost lost in the region of the clouds ; the Stormy Petrels (*Theapidroma Wilsonii*) crowd in great numbers around vessels and follow in their wake, as if seeking the protection of man. The Sea Gulls and Terns make the shores re-echo with their hoarse, clamorus notes. The Loon (*Colymbus glacialis*) is excessively restless and his screams are heard at a distance of more than a mile, and the Barred Owl (*Strix nebulosa*) utters his funereal cries even in the day, but when finer weather is about to return the whole scene is changed, and every hedge and copse and grove is rendered vocal and the whole feathered tribe seem to rejoice at the prospects of the cessation of the storm and the anticipation of bright skies and sunny days.

But, although our subject is far from being exhausted, I am admonished that I have already trespassed to long on your patience and that it is time to bring these desultory remarks to a close. If I shall have fortunately succeeded in throwing even a ray of light on that which has hitherto appeared mysterious in nature; or if I have been enabled to awaken in a single mind a sentiment of admiration and gratitude to that superintending Providence, who teaches "the Stork in the heavens to know her appointed time, and the Turtle, and the Crane, and the Swallow to know the time of their coming," I shall be doubly recompensed for those pleasing studies of nature which have enabled me to offer these remarks. The farther we pursue this subject the more we will be convinced that there is a wise arrangement in nature which governs instinct and action, and creates being and beauty and happiness. The laws by which the whole system of nature is governed are equally simple and majestic, and are equally visible in the minutest as well as in the most stupendous of God's works, From the beauty and harmony of that system of nature by which we are surrounded the mind is insensibly led to admire and adore that mighty cause—the fountain of wisdom and perfection—who though unseen is ever present, who is "The source of all matter and mind and modes of existence."

The temple of nature, wide and wonderful as it is, stands ever open inviting the ignorant as well as the wise to enter and learn those lessons which are calculated not only to enlighten the mind but to improve the heart; and the chief object of science and philosophy should be to lead us to the altar of the benevolent Author of all things, and to make our experience and knowledge subservient to His grand designs.

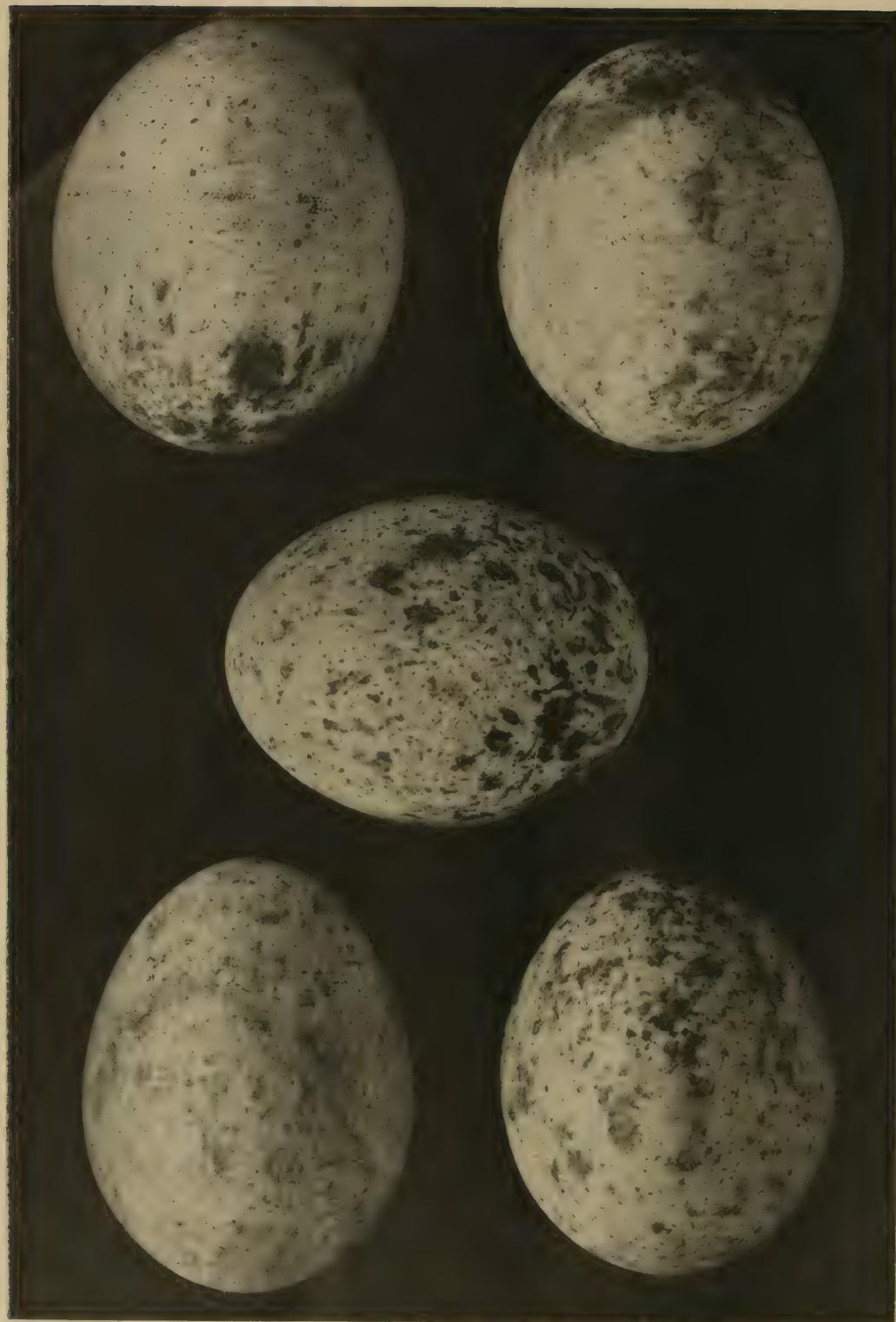
Breeding of Harlan's Hawk in Iowa

By Charles R. Keyes

A SERIES of five sets of eggs of Harlan's Hawk (*Buteo borealis harlani*), collected by the late Jasper Brown, is probably unique and is herewith put on record. The eggs are all of the same general size and type, were all taken in successive years in the same part of a large tract of timber, and so are in all probability the product of a single pair of birds.

The locality should be more fully described. The tract of timber mentioned extends for about six miles in length and three miles in width along the bluffs to the north of the Iowa river as it passes through the Northern part of Iowa County. A large part of the tract is owned by the Amana Society, a large communistic settlement of Germans founded more than fifty years ago. We have here probably the explanation of its preservation. As a rule the larger trees have been judiciously culled except in the deeper hollows, but a sturdy growth of young black, red, white and burr oaks has sprung up, so that the timber has remained practically continuous. The whole area is wild and rough and, with its maze of similar-looking ridges and hollows, quite bewildering to the novice who once leaves the narrow roadways cut through it. The pair of Harlan's Hawks discovered by Mr. Brown used for nesting trees the smaller oaks of the east central part of the timber. On three of the data cards the locality is given as Amana, Iowa, on two as Norway, Iowa. The nest sites were nearer to Amana, however and this designation would be preferable for all five. The first set was collected in 1898 and a set each year thereafter until 1902. As stated the eggs are of the same general type and size. Most of the markings are small, a common size being about two millimeters in the shorter and three or four millimeters in the longer diameter, and these tend to distribute themselves over the entire surface of the eggs. Moreover these longer diameters are generally arranged lengthwise of the eggs, thus producing rather an appearance of being marked longitudinally. The ground color of all the eggs is a dainty white. Fuller data concerning the five sets follow.

I. Set of eggs, slightly incubated, April 21, 1898. Two eggs are



HARLAN'S HAWK—SET OF TWO ABOVE—SET OF THREE BELOW
TAKEN BY JASPER BROWN

marked over the entire surface with spots and blotches of pinkish brown, which are somewhat heavier on the small ends. There are a few small scattered markings of a darker brown. The third egg has markings of deep brown slightly underlaid with purplish and with the heavier blotches on the large end. The eggs measure 47 x 57, 46 x 59, and 47 x 58 mm. The nest was placed 35 feet up in a white oak and was apparently a crow's nest hastily fitted up by enlarging the surface outside and adding a lining of the inner bark of wild grapevine and dead cottonwood. Collection of John Lewis Childs.

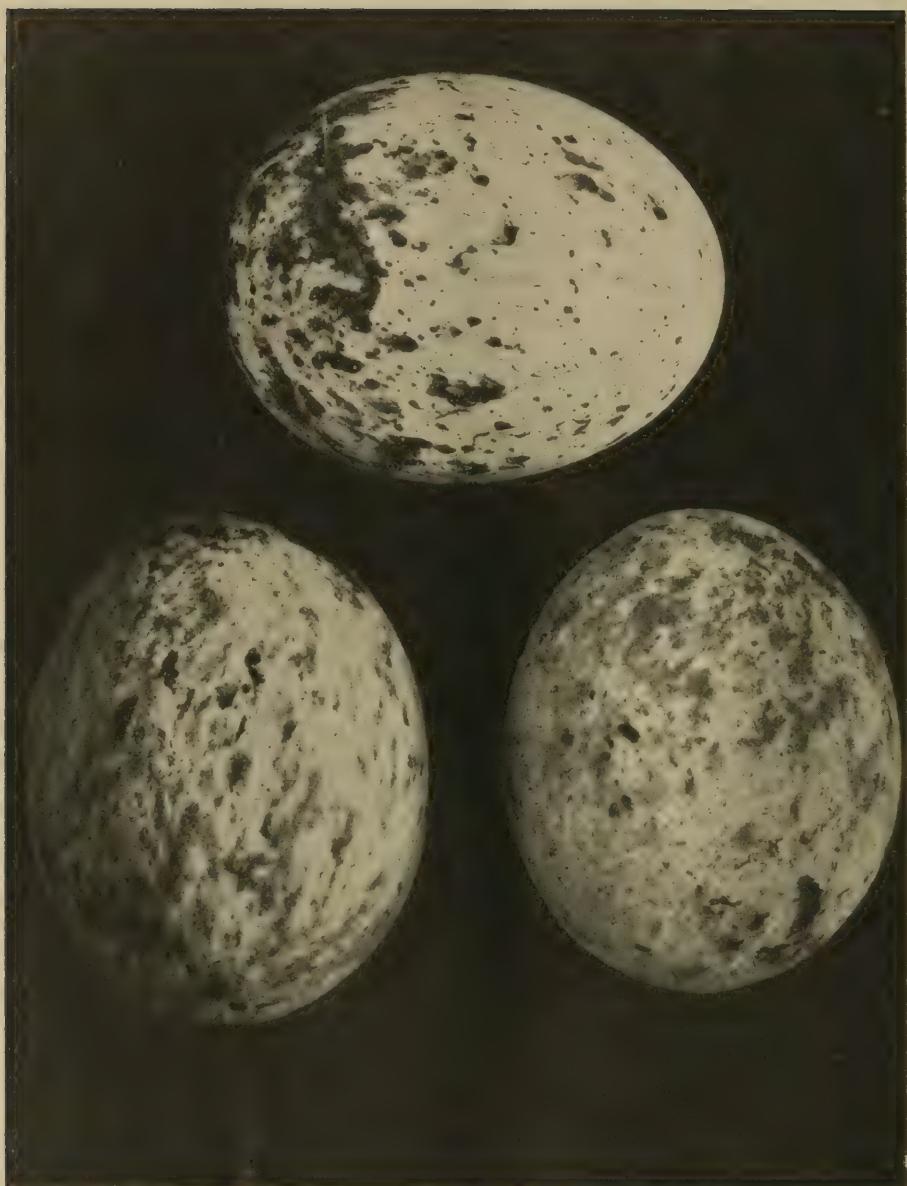
II. Set of 3 eggs. Very slightly incubated. April 24, 1899. The markings on all three eggs are small and rather light brown in color, cover the entire surface, and are strikingly longitudinal in arrangement. The nest was in a scraggly black oak, 30 feet from the ground, and composed of sticks, stems, grasses, leaves, and pieces of white oak bark. The set is still in the Jasper Brown collection and I have been unable to measure the eggs. They would not differ essentially in measurements, however, from those of the three sets given.

III. Set of 3 eggs, incubated a little over one third. April 9, 1900. Two of the eggs are marked with rather prominent brown blotches, principally on the larger ends, but with smaller markings of the same color flowing off toward the small ends and besprinkling the entire surface. The third egg is covered evenly throughout with fine longitudinal markings in a few places with larger blotches of brown color, these overlaid in a few places with larger blotches of brown. Size of eggs, 48x61, 49x60, 47x60 mm. Nest was in a scraggly black oak tree, 32 feet from the ground, composed of sticks and stems, lined with leaves, grasses, rabbit and pocket gopher fur and hair of squirrels. Collection of John Lewis Childs.

IV. Set of 2 eggs, slightly incubated. March 29, 1901. Both eggs are marked over the entire surface with small brown spots, darker on one than on the other, and tending, as on the other specimens, to run lengthwise of the eggs. On one egg the distribution is even, on the other heavier at the small end. Size, 46x61, 47x58 mm. The nest was in a scraggly, gnarled burr oak, well made of sticks, stems, grasses, leaves, weed pith, some rabbit fur, and feathers from Grouse or Bob-white. Height above ground not given but doubtless, in this kind of tree, not much different from the other four. Collection of John Lewis Childs.

V. Set of 3 eggs, slightly incubated, April 10, 1902. This set is not now before me but, as I remember, it is quite similar in size and coloration to set III above. The nest was in the same white oak from which the first set was taken on April 21, 1898. The birds had added leaves and grass and many feathers. Collection of G. H. Messenger, Atlantic, Iowa.

It will be seen from the above that the nidification of Harlan's Hawk



HARLAN'S HAWK, SET OF THREE TAKEN BY JASPER BROWN

differs quite naturally from typical instances of the Red-tailed Hawk, the nest being placed at so low an elevation and without the commanding view of surrounding country that the latter species prefers. The eggs, too, are readily distinguishable from a typical series of Redtails. Both these variations may of course be exceptional, as it is believed that we are here dealing with but one pair of birds.

The question of Mr. Brown's identification of these hawks naturally arises. For two seasons he took them to be Rough-legged Hawks in the dark plumage; but later, the birds being rather unsuspicious and permitting fairly close approach, he convinced himself that they were without the feathered tarsus. Later, either in the spring of 1902 or 1903, a hunter shot one of the pair from the nest and a few days afterward Mr. Brown learned of the fact and was fortunately able to find and examine the bird. It was much decomposed but still sufficiently intact to show that it had every essential feature of Harlan's Hawk in the melanistic phase of plumage.

Long Island Bird Notes for 1907

By John Lewis Childs

THE spring of this year was a most unusually late one and bird migration was, in consequence, quite irregular. A brief but very warm spell in March brought many of the early spring migrants ahead of their usual time, while the inclement weather of April and a large portion of May delayed many of the later species.

Fox Sparrows in Full Song

On March 29th I observed at Smithtown, St. James and Childsview a good many Fox Sparrows, a few of which were singing beautifully. It is the first time I have ever heard this bird sing during its migration.

The Red-breasted Nuthatch Breeding on Long Island

Late in April one of the gamekeepers at the Wyandanch Club, Smithtown, told me that a pair of Nuthatches were nesting in the trunk of an apple tree near his house, and were at that time carrying food to their young. I asked him to lead me to the tree, which he did. Sure enough, there was a small round hole some eight feet up, evidently caused by a knot rotting away, leaving a cavity which the growth of the tree was endeavoring to close up and had almost succeeded in doing so. No bird was in sight, but I was told to watch a few minutes and one would appear. I had not long to wait before a Red-breasted Nuthatch, carrying a grub, appeared and perched upon a nearby tree. The bird soon dropped down to the tree that I was watching, entered the cavity, and immediately came out minus the grub. This was repeated twice during the fifteen minutes I was on guard, and I did not question the guide's belief that the old birds were feeding a brood of young. Three weeks later this gamekeeper told me that he had discovered that at the time I was there the young had not hatched, and what I saw was only the male feeding the female upon the nest. The young hatched out a few days later, when both parents were observed caring for them.

Hairy Woodpecker Breeding on Long Island

During my residence on Long Island of some thirty-four years, I have never until this year seen the Hairy Woodpecker here in the breeding season. This

year at Smithtown I found a pair and their nest on May 24th and five days later took the stub which contained three fresh eggs. I also took the pair of birds. The nest was in the stub of an oak tree the top of which had been broken off by the wind, and was about seven feet from the ground.

Black and White Warbler Nesting

While the Black and White Warbler is seen on Long Island every year during the summer season, I found my first nest of this species on May 29th. The nest contained four slightly incubated eggs and one Cowbird egg. It was situated in a little bank by the side of a roadway leading through a piece of woods.

Blue-winged Warbler

A single male Blue-winged Warbler in fine plumage was observed by me the end of May in a small piece of scrub-oak and chestnut near Floral Park, just outside the limits of Greater New York. This bird was undoubtedly breeding and it is the first one I have ever seen or heard singing on Long Island during the breeding season.

Whip-poor-wills Abundant

son than for several years past.

Whip-poor-wills were more abundant on the North Shore of Long Island this sea-

English Sparrows Breeding in Tree Cavities

only in old orchards adjacent to buildings but in many out of the way places, though not in dense forest. Evidently this obnoxious bird is adapting itself to natural conditions, and will not long depend upon the barnyard for subsistence, or upon buildings for nesting places.

Mourning Dove

Every year I notice more and more English Sparrows nesting in tree cavities, not

At Smithtown three nests were observed, all within a stone's throw of each other, and in a locality where I have never before found but one nest of this bird, and that was several years ago.

Late Breeding of Song Sparrows

I have seen more Mourning Doves on Long Island this season than ever before.

On August 18th I found a nest with three eggs of the Song Sparrow in the shrubbery near my home at Floral Park. The brood hatched out some time between the 23rd and 25th.

American Redstart Common

The American Redstart has been a common bird in Long Island woods this summer. Two nests were found in a small piece of young timber at Floral Park, near the New York City line. None were ever known to breed in this locality before.

Black-throated Green Warbler

On June 19th, in company with Mr. John Burroughs, I visited President Roosevelt at his country place, Sagamore Hill, Oyster Bay. The President, who is

an enthusiastic student of Natural History, took us for a long walk through his woods and fields. He was particularly anxious that we should see and hear the Black-throated Green Warbler which was breeding in his woods for the first time. He had no difficulty in showing us two or three singing males that were evidently breeding, as the President said that they were always to be found in their respective localities, and generally singing from one particular tree.

At luncheon the President entertained us by telling about the birds he had observed at the White House grounds at Washington, remarking that people used to stare at him as he stood gazing up into the trees, like one demented. "No doubt they thought me insane," he remarked. "Yes," said Mrs. Roosevelt, "and as I was always with him no doubt they thought I was the nurse who had him in charge."

Yellow-throated Warbler on Long Island President Roosevelt was so fortunate as to find the Yellow-throated Warbler (*Dendroica dominicia*) near his house at Sagamore Hill, Oyster Bay, about July 18th. This is probably the first Long Island record for this bird, and one of the very few records of its appearance so far north as New York. The President wrote me very enthusiastically about this discovery, showing his keen appreciation of so rare a find and his great knowledge of the habits and habitat of North American birds.

A Marvelous Collection of Unpublished Bird Songs

By John Lewis Childs

IN the library of a Long Island church there was recently found a large volume of Bird-Songs in original manuscript. The author of these "Songs" or poems was Miller Hegeman, a minister of the gospel, who resided on Long Island many years, and was pastor of various parishes. That Mr. Hegeman was a thorough bird student, and got his knowledge of the birds first-hand, is apparent, and that he was a poet of high order is also evident; and he must also have been a thorough master of music. The poems number 167, the title of each being some well-known bird. The notes of each bird are given in a bar of music preceding each poem and is a marvelous interpretation of the song of the particular bird to which the poem is dedicated. The rhythm of the verses also harmonizes with that of the bird song. In prefacing this volume of poems the author says:

"The following poems represent a series of personal interviews with the birds themselves, extending over forty years, the music accompanying each poem being transcribed directly from the bird by a system of musical shorthand patiently developed by the author."

Most of the poems describe in a most ingenious and charming way the habits of the birds as well as their songs. Note this one stanza (of which there are a dozen) from the

WINTER WREN

Flitting through the brush heap,
Scattering the snow,
Now on this side, now on that,
Which I hardly know;
Here, there, everywhere,
Darting to and fro,
Breezy little busybody,
Ho-hi-ho!
With his wondrous little ditty,
O so wise and O so witty;
"Hurry up, hurry up.
Who are you? ho, hi, how de do, good-by,
Look before me, look behind me,

The Warbler

Look, but you will never find me,
 Dart, fly, zip, buzz, I am never where I was,
 I'm a merry little midget,
 Fidget, fidget, fidget, fidget,
 Quick as a wink, that's my ditty, quick as a
 wink, I'm a witty,
 Wree, wree, witty, witty, wree, wree, wren

The song entitled "The Bobolink" is so short and so very good that we give it in full :

THE BOBOLINK

Up from the tickle-tops out Bobolinkin pops,
 Sprinkling his love-calls over the lee;
 Freaking and frolicking round in his rollicking,
 Now with the butterfly, now with the bee;
 Telling his northern name, till all the birds exclaim;
 "That's Bob, see him there, see him there, see!"
 See how that mocking bird bends to that talking bird,
 "No use, mocking bird, you can't mock me!"
 Sing till the meadows shine with that gay song of thine,
 Sing till the leaves laugh outright on the tree,
 Sing till the sunny air, sing till men everywhere,
 Sound back that song through the land of the free,
 Singing so airily, flying so fairly,
 In thy infectious, ebullient glee;
 Here comes the saucy chap, shaking his jaunty cap,
 Spilling the dew-beaded dock on the lea:
 with:
 'Bobolink, Bobolink,
 Bobolinkum, Bobolinkum, funny, funny, don't you think um ?
 Kick your slipper, kick your slipper,
 Zwree, zwree, zwree, zwree;
 What's the matter, little lady, sitting there so shy and shady,
 Why that doleful little ditty? crying, crying, what a pity,
 Me, me, me, me;
 Ha, ha, I discover, she has lately lost her lover,
 Never mind, dearie, cheer up, dearie,
 Give me but a loving glance, sing, smile, skip, dance,
 Skip-a-toe-e, skip-a-toe-e,
 Twse, twse, twse, twse;
 Hear beauty, hear beauty, let me be your lover beauty,
 Chick-i-pe-tu, chick-i-pe-tu,
 Don't you see me bow to you?
 As I rock, rock, rock, on the dickie-birdie-dock,
 As I swing, as I sing,
 As I shiver-iver-iver-iver-iver-iver,
 As I quiver-iver-iver-iver-iver-iver,
 With the ecstasy of love for my dainty little dove,
 With the bliss that is to be, be, be, be, be,
 Don't you see, don't you see,
 How my heart is running over with its rhapsody to thee?
 To the bubble, bubble, bubble, bubble, bubble, bubble, bubble
 To the bubble of the water-fall that tinkles in the nook,
 For my father was a Bubble-link, my mother was a Brook;

So come now, sweetheart, cheer up, sweetheart,
 Don't pucker, don't pout, let the little chuckles out,
 Keep a-laughing, keep a-laughing,
 Hee, hee, hee, hee;
 Every maid's a little mellow till she gets another fellow,
 Come, come, come, kiss me, kiss me, come,
 Over hill and over hollow, I'll fly, you follow,
 Kick your slipper, kick your slipper,
 Tse, tse, tse, tse, tse, tse.

In striking contrast to the Bobolink are the verses entitled

THE WANDERING ALBATROSS

Lone Condor of the liquid cliff, that rears its awful verge,
 From out of the angry deep, far up yon snowy Alp of surge;
 Poised in thy proud colossal calm, thy huge, gigantic form,
 Scorns with imperial disdain the whirlwind and the storm.

Most of the poetic descriptions of the habits of birds are so apt that one at all familiar with birds and their ways needs no mention of names to recognize them. For instance what could this be but the

SONG SPARROW

Thou first song-charmer of the spring, seduced by thy sweet strain,
 The timid violet twinkles out where long the snow hath lain;
 Thou hast all seasons in thy song, all sparkles in thy thrills,
 To clasp the circlet of the months with gems of silvery trills.

Or this.

Lisping like a lover, hissing like a snake,
 Rattling like a kingfisher, quacking like a drake,
 Barking like a coyote, mewing like a cat,
 So he goes from bird to bird, that Yellow-Breasted Chat.

This also is wonderfully apt and pretty :

And who hath heard, thou brook-taught bird,
 The rapture of thy rhythmic gushes,
 The liquid strain of whose refrain,
 Mocks back the music of the rushes?
 O silver tongue so finely strung,
 O trickling words, O pebbly trilling!
 O holy hush, O Water Thrush,
 The dewiness of song distilling!

A lovely stanza on the Indigo Bunting:

The sky has stained thee through and through,
 With its cerulean color;
 And left on thee its liveliest hue,
 As summer days grow duller.

A very charming pen picture of the Wood Duck is given in the first stanza of the poem under that head.

The Warbler

THE WOOD-DUCK

Fair bird of the wood-brook, what bright recollections,
 The dyes of its irian plumage disclose;
 Like the rainbow's soft glints shine its glossy reflections
 Of emerald and sapphire and violet and rose;
 Its long pendant crest with its plumes iridescent,
 Its wavering lines with their diamond-shaped dots,
 Its breast lightly spanned with its lovely white crescent,
 And starred with its snowy triangular spots.

Some exceedingly pretty thoughts occur in his rather long poem on

THE HUMMINGBIRD

From summer isles of song I stray,
 With many a glittering pendant;
 A feathered kiss flower on my way,
 So rare and so resplendent.

The soft hues of the opal shine,
 The sapphire bright and sunny,
 And now the topaz gleam is mine,
 And now the chalcedony.

That copies of many of these "Bird-Songs" have in years past been sent to distinguished persons and authors is evident from the letters copied with the poems. We give extracts from a few of them :

"You have enclosed the unbound volume of the air, embalmed the echoes, and aroused the jealousies of the silence." *Victor Hugo.*

"I beg you to accept my thanks for the pleasure your 'Bird-Songs' have afforded me." *Victoria.*

"Your 'Bird-Songs' will live as long as the birds themselves." *Jean Ingelow.*

"I have found myself recurring to these 'Bird-Songs' with deepening interest." *Longfellow.*

"I consider them in connection with their musical scores a production of singular beauty." *Whittier.*

"They will soon sing their way into the heart of the world." *Henry Ward Beecher.*

But who could give anything but praise to a work that contains even one such tuneful gem as these three stanzas from

THE DIPPER OR WATER OUZEL

O I am the Dipper with spray-jewelled slipper,
 The king of the high mountain burn;
 I haunt the crevasses, the peaks and the passes,
 That whiten the water-fall's urn;
 I flit through the rushes, the burns and the bushes,
 I dip in the scoop of the rock;
 And where the crag tosses its spray on the mosses,

The stream never dries on my sock;
As I dream of it, drink of it, bathe on the brink of it,
All to that spray-jewelled sock.

I love it, I love it, that torrent above it,
That draught so deliciously cool;
I took and I listen where icicles glisten,
And plunge open-eyed in the pool;
I sing to the naiad, the nymphian naiad,
As the scarf from her shoulder she flings;
For the song she doth carol in shining apparel,
Is the song that the water-fall sings;
As I dip in it, dart in it, lose all my heart in it,
All to the song that it sings.

Cold water, cold water, cold, icy cold water,
That quenches the fever of thirst;
O try it, O take it, O never forsake it,
For the cup that the syren hath curst;
Come hither, come hither, where cheeks never wither,
Come hither with life-giving vow,
Where the crag as it tosses the spray on the mosses,
Baptizes with rain-bows thy brow;
Then dream of it, drink of it, think, only think of it,
Come to the Dipper, come now,
To that snow-printed slipper, that spray-jewelled slipper,
That gleams by the cataract s brow.

We are glad to say that this unique volume of "Bird-Songs" has been added to our Ornithological Library, and it is probable that in future numbers of THE WARBLER, or in some other way, part or all of these "Bird-Songs" will be published. The work is prized more than any other book in our library.

The Childs Library of North American Ornithology.

IT was our intention to publish in this volume of THE WARBLER a complete Catalogue of the Library of North American Ornithology, which we have collected together in connection with the Childs' Ornithological Museum, but space does not permit. The Library consists of seven hundred bound volumes and is supposed to contain every work of importance on North American Ornithology that was ever written, as well as many foreign works that have some reference to our birds.

Among the choicest books in the library is a set of Audubon's Birds of North America, elephant folio edition (the superb Shattuck copy), the works of Bonaparte, Baird, Brewer, Cassin, Lawrence, and Ridgway; Catesby's Birds of Carolina and Florida, all the works of Dr. Coues and Cory also Elliot's grand works complete, including the Pheasants; Jones' Nests and Eggs of the Birds of Ohio, two large volumes with magnificent colored plates. This is one of the very finest, and probably the rarest and least known of all important North American Ornithological works. All the works of Maynard, Nuttall and that splendid old book of Swainson and Richardson, Fauna Boreali Americana; Seebold's Thrushes, Melherb's Woodpeckers, Desmarest's Tanagers, etc., etc. Also the works of Alexander Wilson.

Among magazines of North American Ornithology the library contains complete files of all that have been published: Nuttall's Bulletin, The Auk, Condor, Ornithologist and Oologist, Osprey, Nidologist and many others. Also The Ibis complete and Forest and Stream complete in nearly seventy volumes, with index of all bird notes. Also practically all of the Government publications relating to or touching upon birds, such as the reports of various expeditions and of the National Museum and Agricultural Department.

Of the minor works on North American Ornithology (pamphlets) the library contains a good collection, which has been classified as much as possible and bound collectively in good size volumes, with index. We have found this to be the most convenient way of handling pamphlets for library use, study and reference. The examples on next two pages illustrate this plan.

Our Library is at the service of bird students and authors who are in a position to make practical use of it.

Birds. 28 Faunal List, etc., in 1 Vol.
 Coues—Ornithology of Labrador.
 Herrick—Birds of Grand Manan.
 Maynard—Birds of Coos Co., N. H., and Oxford Co., Me.
 Roosevelt—Summer Birds of Franklin Co., N. Y., 1874.
 Gregg—Birds of Chemung Co., N. Y., 1870.
 Morris—Game Birds of Connecticut.
 Abbot—Birds of New Jersey.
 Turnbull—Birds of Pennsylvania and New Jersey, 1869.
 Barnard—Birds of Chester Co., Pa., 1860.
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 Langdon—Birds of Cincinnati, 1877.
 Roberts—Birds of Minneapolis.
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 Slater—Birds from Vancouver Island.
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 Kidder—Ornithology of Kerguelen Island, 1875.
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 Chapman—Young Flamingos, ill., 1905.
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 Barlow—Land Birds of Placerville ill., 1901.
 Emerson—The Farallone Islands Revisited, ill., 1904.

The Warbler

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 Lawrence—Birds of S. W. Mexico, 1876.
 Stone—Birds of Harvey Lake, Pa., 1891
 Cooke—Migrations of Birds, 1903.
 Fisher—Marsh Hawk and Screech Owl. Colored Plates.
 Robbins—Bird Killing as a Method in Ornith. 1901.
 Barlow—Nesting of Hermit Warbler, 1899.
 Young—The Solitary Sandpiper, 1899.
 MacFarlane—Birds and Eggs coll. in Art. Am., 1861-'66.
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 Reed—Terns of Great Gull Island, N. Y., 1897.
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 Stone—Birds Coll. in Yucatan, 1870.
 Oberholser—Birds of Wayne Co., Ohio, ill., 1896.
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Weed—Econ. Relations, N. Am. Birds, 1902.
 Nast—Birds of Ont. Rel. to Agl. ill., 1901.
 Beal—Food of Bobolinks, and Blackbirds, ill., 1900.
 Judd—Economic Value of Bobwhite, Colored Plate, 1903.
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Birds. 4 titles. Fine colored plates.

Cassin—New Am. Owls.
 Cassin—Monog. Genera *Hydropsalis*.
 Ray—New *Mergulus*.
 Gambel—Birds of California.



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JOHN LEWIS CHILDS, EDITOR

Krideri the Fearless

By P. B. Peabody

I WAS walking down the narrow plank walk of Coal Camp at Cambria, after Even-song, one June evening. The blinking bulbs, festooned like Chinese lanterns, along the house-tops, made barely visible the way; amid the dense shadows that fell from the high canyon walls above the camp.

A burly man over-took me: Manifestly he was not a minor; but a well-to-do ranchman. He grasped my arm, familiarly; as men grasp the arm of a clergyman with whom they enjoy a one-side acquaintance: "I want you to marry me", rather equivocally he said: "You know Mrs. H?" (I nodded). "The kids need her and,—she needs the kids."—(A pause).—I tightened my grip on his arm: "Has either of you Wife or Husband living?" (That is a question that is ever pertinent, in Wyoming!) Questions of eligibility settled, I inquired the way to the ranch: "It's out on Skull Creek, ten miles from here. You go south from Newcastle three miles to the T-Bar-Y corner. Then you turn west for three miles until you reach Dead Mule Creek. There you cross under the Burlington Track; and you're at the mouth of Skull Creek. From there",—and he laughed a little, to relieve the tension of his mood,—"well, I guess you'll just have to follow your nose the rest of the way".

The road to Dead Mule Creek lay across a small prairie dog town. Above this hovered a finely-plumed male Krider Hawk.—"Aha, old fellow", said I, out loud,—"I wonder where your babies are?" A moment or two later my prairie-dog-chasing pointer ran right across the home of a pair of burrowing owls. Instantly these two, with a malignancy engendered, one

The Warbler

might believe, by that slinking mephistopheles, the Coyote, began to dive at the intruder; each one shrieking, at the full of its voice, an iterated, "Lib-lib-lib-lib-lib".

Like the palms of the Orient were soon silhouetted the cottonwoods of Dead Mule Creek. And Dead Mule Creek, to my surprise, proved not a mud-flow, like the bulk of the Wyoming Creeks. It ran cleanly; and over pebbles.

Being, fairly, an old settler, I found, ere long, my way thru the labyrinths that hid the mouth of Skull Creek. Thru numerous gates I made



YOUNG KRIDER'S HAWK

my way; and at last, after a sharp turn around a great spur of the hills there stood in view a solitary mass of rock more fantastic, surprising, majestic than even the well-known Crawford Buttes of Sioux County, Nebraska.

I had just promised myself a delightsome survey of this castled pile, on the way back from the wedding, when the scream of a hawk was heard. The (seemingly) spotless belly proclaimed the species; and the help of my field-glass indentified the quarry: a half-grown prairie-dog. I waved my hat in recognition. Straight across the quarter-mile gorge he swept, with barely a stroke of wing. Veering neither to right nor to left he arrowed straight for the fortress-rock.

His heralding call was met by answering scream. Then swift from a little ledge which the field-glass but faintly revealed came out the female. The male had found me out; and the two greeted me with oft-repeated and strident "je-e-e-er"-ing. The faint roadway led thru a gate; and still through another gate. Then, crossing a little gorge which seamed the sage-brush it sharply turned along the lower margin of the fortress. The young Krider Hawks, with all a hawk's early-developed intentness, were watching me, quietly: ceasing, for a time, the chicken-chirps with which they had begun to await their prairie-dog feast: when once the parent's voice gave call to luncheon. The shadows were creeping far down the slopes on my return. Both hawks were at home; and they greeted my near approach with increasing and angry disquietude.

Discretion and valor were never more cleverly blended. The passes of the female, (always the proner to let love triumph over caution,) brought her often so near that every delicate blending of the softened colors of her race became clearly see-able to the eye. Yet she never perched near. Always a far-away young bull-pine furnished her a perching outlook.

Laboriously I climbed a crack to reach the over look down to the eyrie; only to laugh at a stupidity which had failed to consider possible *gradual* approach from the southwest. Yet such there was. Just a steep climb among the talus, well-grown with little pines and ivy, and one might have *walked*, duffle and all, the entire way to the verge that overlooked the prey. Where the earth of the talus gave way to the seamy, solid sand-rock there lay a gaunt dead pine. The roots were piercing deep into the crevices. The two long, dead arms were far-outstretched over the rock-masses; as if the pine, in life, had sheltered them while one might; and then, when the winds beat her down, had clasped them in her dying embrace. At the end of one arm was a curious "well"-like hole, some feet down among the shattered rocks. Just beyond this was the cliff-verge above the eyrie. Sheer boy-sport it was to lie on one's face and peer over. Some twenty feet lay between one's nose and the ledge whereon rested the nest of the Krider Hawks; and a convenient distance it was. The sticks and turf and sage-stems were clean of excreta; but dirty with much else. On the outer margin lay the well-picked skeleton of a grown bull-snake. This, the eyes revealed: the nose, much else.

The young hawks were sprouting their flight-feathers. The fulvous natal down, however, gave them still that fascinating cast of texture and color which some of us never tire of gazing upon. Alert the youngsters were; the mere wave of one's hand would bring upward to the rock-edge the glint of their fearless eyes. When the Wise Man wrote about the mystery of "the way of a bird in the air" he was doubtless thinking of the vulture. But the mystery would, of a truth, have deepened for him had he ever



A FULL BROOD OF KRIDER'S HAWK

watched a red-tailed hawk disputing domain, at his nest, with a man who does not profess to be wise at all. Yet, a few things were learned, that sunset hour. The violet-green swallows were winnowing and diving about the sister butte; (a rock-mass more interesting, if possible, than her larger, haughtier fellow.) A pair of rock wrens were exercising all their ingenuity to draw away from their hidden young a mortal who heeded them not; a pair of blue birds were equally solicitous for lusty and noisy young that were hidden somewhere in a cavity in the nose of the krider-cliff; and,—the sun, provokingly, kept going down!

It was daylight, on the Fourth of July. Family-less, for the time being, one scorned to waste the day over petty patriotic fizz and bang: he would spend the day with his Krider Hawks. Hardly had the last gate been passed at the entrance of Skull Creek, when Pater Krider emerged out of nothingness upon the scene. Along his old roadway he came, entering the eastern jaw of the mouth of Skull Creek Canyon. Right across he went, straight as any bird might fly; and in his talons, held pendently by the head, was a four-foot bull-snake. (They grow, rarely, to eight feet, by the foot-rule, in Wyoming)!

My plan, that day, was to make a full survey of the fortress rock. Approaching the front, with this in view, I saw, to my surprise, one of the young hawks crouching in the hollows at the base of the rocks.

He would seem to have fallen off the ledge, in some way. Perhaps he had toppled over backward after too eager a jerk at the tough bull-snake brought for his dinner, one day. At any rate, here he was,—craw empty,

defenders wanting. Apparently he was deserted and ignored, quite.

Unlike he was to any other young hawk I ever studied. Like any parrot who permits due liberties from a friend, this hawk-ling seemed to enter nirvana, when one would scratch his head. He would sit quietly, in one spot, without apparent fear or caution, so long as one remained near. But the moment one began some tour of exploration he was off, presently, among the rocks, investigating on his own hook. (Somewhat later he proved his mettle: Jan the pointer had been coursing jack rabbits among the sage-brush and had returned to the buggy; only to find there a strange, brown and yellow, pinfeathery creature tethered to a hind wheel. Investigation and attack were simultaneous. But,—there was just the flash of a young Krider-hawk vaulting over on his back; a twinkling of two talons; a quick, sharp howl; and a vacant place!)

Such masses of rock as that of which I am telling seem to have a sort of personality of their own. One seemed to be fairly awed, as he stood at the base of the vertical walls; with *minutiae* of endless interest all about, and below, and above, and beyond, and within.

Just here was a honey-combed bit of rock where a colony of sand-wasps had burrowed for their nesting. A few feet away were crevices, filled with excreta, giving all needed evidence as to the source of the kangaroo-rat whose tail I had found at the mouth of my burrowing owl dug-out. Away



NESTING SITE OF KRIDER'S HAWK

above my head, as I cautiously climbed into and explored several deep pot-holes in one great seam of the butte-wall, there appeared abundant splashes of bird-lime; revealing the little crevice wherefrom, a few weeks before, had emerged a family of desert sparrow hawks, bound for the grass-hopper-swarming sage-plains. In every little cup of wind-etched sand-stone ledge there lay the shells of the seeds of the prevailing form of cactus. In these nature-formed caches the masses of eaten seed had been accumulating for,—who knows how long? How many generations of kangaroo rats, wood rats and Hespero-mice had battened, think you, on these apparently inaccessible stores of the spine-defended cactus? But, naturally, the center of interest was in the environ of the eyrie of the hawks. The home ledge was about thirty or forty feet above the base of the cliff. The edge of the nest was sheerly up from the base. Yet strangely enough, the area beneath the nest, for at least a dozen feet outward, was clear of any evidence of the occupancy in the sky-scraper above. Full fifteen feet from the rock-base one had to go, in order to study the character of hawk-sanitation. Few remains, indeed, were found here of any forms of prey. And yet a few flight-feathers of the Magpie gave proof that Mag the Outlaw has at least *one* mortal enemy. There were, also, a few bones. But of bird-lime there was plenty, indeed. Its distance from the source of supply would have been inscrutable to one unversed in the ways of a hawk. Facts, however, gave little wonder to one who had learned,—not through surveys of nests of tree and rock but of a nest on the ground,—not in Wyoming but in the Dakotas,—how cleanliness of nest is secured, with hawks, by the young elevating their howitzers a little above the horizontal: and then firing their ammunition, point-blank, into space.

Every possible effort was made to learn the spirit and attitude of the parent hawks toward the hapless young bird marooned on earth; quite inaccessible to his two little brothers of the air; and beneath the dignity of his aerial parents. Yet no amount of imaginative ingenuity could hypnotize me into believing that he had not passed utterly out of their care.

So few of the young of this race have been studied at the peculiar period of plumage-development in question that this youngster, which I felt compelled to adopt, received not a little attention. Even the monochrome values of the half-tone give fair suggestion of the plumage. The unabraded white of the terminal tail bar was very conspicuous; and the fulvous of the entire tail was more suggestive. The whitish of the under parts was slightly tinged with fulvous; and even the illustration shows the nascent "cravat" of brown which the Krider Hawk shares with his smaller off-cousin of Swainson name. (The dark breast area is, of course, smaller than in *swainsoni*.) [X] A strange feature of the bird's condition lay in the manifest presence of mites about the neck. (A negative of this specimen, with head down-turned, shows the area in question to be nearly bare.)

For the mid-day luncheon I sat beneath the shadow of the over-hanging north-aspect of the great rock and made survey of the valley of Skull Creek; which wound its way desert-ward, not far below. The outlook bespoke Wyoming as being a land of fairly startling contrasts.

No positively-quaint landscape that I have ever seen was comparable to the valley of Skull Creek as observed while I had wound my tortuous way through it, on my way to make the widower and the widow one. Often one could see but a few feet ahead; for the turns in the road and the luxuriance of the shrubby and the annual growths. One instant a low vertical wall of sandstone would press my buggy down to the very margin of the



KRIDER'S HAWK, MAROONED AND PROSPECTING

creek, with its deep fringe of alders; and the next, after passing through another gate, a bit of sumptuous alfalfa, no larger than a city lawn, would fringe the road-margin. And always and everywhere great over-hanging masses of "threatening rock" looked down upon the little vistas of sun-sparkling waters that laughed their glad way onward over their boulders; only, at the last to be quietly lost in the level sands far out upon the plains. Truly fascinating was the luxuriant creek-marge as I looked down upon it from the dead greyness of my fortress rock. For there, along the stream, were birds in no sense common in Northeastern Wyoming; with one, (the Lazull Bunting), nowhere else observed in all the great stretches of Weston County. The songs, so seldom heard, came faintly up to me; as my eyes

followed the rich green line of the creek, with its rushes, rank grasses and cress, far out among the gradually levelling hills; until it was utterly lost among the gumbo buttes that marge the bad-land reaches along the Power River. I sauntered down the connecting ridge to the Sister Butte. An old cattle bedding-ground lay close along its deeply hollowed edge. The butte's over-hanging brow looked down on me. Its mysteries of habitancy held me mute; wondering.

But along its many, many crevices and tiny pot-holes hovered and flitted the dazzling blueness of the violet-green swallows. [Q] Manifestly, they were,—some of them,—still searching for nesting sites. A few barn swallows mingled among them. A white-throated swift or two chattered out his watchman's—rattle of a note amid the sweet voices of the swallow folk.

It was to be my last visit to this enchanted place. Is it any wonder that I was sad of heart? The very fact that a curious reach of great, hollowed rock, (which I had seen, parallelling the one of my exploiting;) held hieroglyphics more varied and interesting than those I had found, lay unexplored,—as testified a cow-boy who watched the camera work with all the gravity and aloofness of his clan—added regret to my wistfulness. But I went away. The young Krider Hawk sat beside me on the buggy seat, silent and uncaring. His two long-time companions had their bellies full, to all seeming. For both the parents, quietly soaring higher and higher, above the rocks, were seeming to me as if, like the aborigines, of long ago, whose charcoal-darkened etchings upon the stone had made monumental the fortress of my Krider Hawks, were, from far aloft, paying their proud homage to the sun: whose disk was steadily falling down behind the great strong, sturdy silence of the serried rocks.

X—Note, Page 6—Dr. L. B. Bishop considers the young Krider Hawk figures in this article as being “inclined to *caturus*”: [the Western Red-tail.] Not strange, this; *caturus* quite unquestionably nests in the Sheridan Region, to the Northwest.

Q—Note, Page 8—In Wyoming, as a rule, the Northern Violet-green Swallow occurs in groups of two or three pairs, at the most. This was the only case wherever I found them flocking. There were, at the mouth of Skull Creek, about seventy birds habiting this one rock.

A Trip to the Dismal River, Nebraska

By John Lewis Childs

ON May 19th I left New York for the Dismal River in the Sand Hill region of north-western Nebraska. I arrived at Mullen, Hooker County, about noon May 22d, where I was met by Mr. William Black and driven some eighteen miles through the Sand Hills to the forks of the Dismal. Mr. Black and his brother control some thirty miles of the Dismal River which is used for their extensive cattle ranges, their western limit beginning some twenty miles below the forks or falls of the river. Mr. Black had with unbounded generosity provided a boat some five by sixteen feet, constructed of heavy sheet-iron in three water-tight sections; two spacious tents, bedding, cook-stove, utensils, lamps, and a two weeks supply of provisions. The outfit was so complete that nothing whatever was lacking that might add to one's comfort or convenience in floating leisurely down the Dismal, camping or landing where and when we pleased; certainly ideal conditions for observing and noting the bird life of that wild and highly interesting region.

There were in the party with me Mr. William Black, his two young sons, William and Robert; my esteemed friends Mr. Cyrus Black and Benjamin Olsen, of Kearney, Nebraska; and Mr. Frank Nash who accompanied the expedition with a saddle horse. We camped for two days at the forks before starting down stream, and ended the expedition on May 30th at the Ranch house of Messrs. Black Brothers, having covered some sixty miles of river through Hooker and Thomas Counties, though probably not over half of that distance in a direct line, all in the heart of the Sand Hills which are of several million acres in extent. The river is very crooked and has cut a deep channel through the hills, and its banks are to some extent wooded with red cedar, ash, wild plum, cottonwood, willow, choke cherry and a few other shrubby trees. But few of these trees are of any considerable size. The surrounding country outside the river banks is absolutely destitute of trees or shrubs. The Sand Hills are, however, covered with a rather sparse growth of buffalo and other nutritious grasses, and the region is adapted to grazing along the river range where stock can water, there being no water

between the Dismal and the Loup River some twenty miles to the east. I have never seen a stone, a pebble or even gravel in the Sand Hills. The soil is all fine sand and clay. The Dismal in places flows through perpendicular clay banks, one hundred feet or more in height, and slanting banks of sand which are continually washing away by the action of the rains and being carried down stream to be deposited on flats and shoals many miles below. The washing away of these banks exposes great quantities of bones of large mammals, some of which must have been concealed for many centuries, as they show at depths below the surface of the soil ranging from a few inches to twenty feet and are in all stages of decay, and even petrified pieces are frequently found in the river or near it. The great quantity of bones one sees gives a good idea of the vastness of animal life that once swarmed in the vicinity of the Dismal. Being the only water in a vast area of good grazing, it must have been an attractive hunting ground for the aborigines, and that they took advantage of it is evident by the great quantity of broken flint, arrow heads and spear points, as well as leaden bullets of the earlier rifle patterns that we found on two or three of their camping grounds near the forks. There are tracts of considerable area which are still barren and the wind cutting away the sand exposes the relics of past ages and races. It was a great country for Buffalo, Elk, Deer and Antelope. The last herd of Elk in Nebraska was on the Dismal River, and a few Antelope and Deer still remain, while the river itself swarms with Beaver, whose work is everywhere evident. The preservation of these animals is largely due to the efforts of Black Brothers who have spared no trouble or expense in keeping the hunters and trappers away. Excepting the Ranch house, which is the home of Mr. Frederick Black and his charming little family, little signs of human life are seen on the river. Only here and there a hut inhabited by a hermit, or some recluse who has flown to the solitude of wild nature, or a misguided settler attempting to get a foothold in a most unpromising locality, is all the signs of human life one sees for nearly a hundred miles of river, including the territory above and below the Ranch house. As may be supposed, the course of the Dismal River affords a rarely good opportunity for observing bird life. Not only do the migrants follow it in vast quantities but the resident and breeding birds are numerous in variety and unlimited in number. It is the most fertile and interesting bird region I have ever seen.

It seems quite remarkable that not a Crow, Song Sparrow or Chipping Sparrow, and only one Robin was observed by our party.

I kept careful notes of all the birds observed from the time I left Mul- len to drive through the Sand Hills to the forks until I reached Thedford after a drive of sixteen miles from the Ranch house on May 30th. The re- sults of these observations are as follows:

Bunting, Lark. Very abundant through the Sand Hills and on the river. We all enjoyed the beautiful aerial song of this remarkable bird.

Bunting, Lazuli. Two fine specimens seen near the forks. There is but one other record of this bird occurring in Nebraska.

Bob-white. Abundant all along the river.

Blackbird, Brewer's. Only one seen.

Blackbird, Red-winged. Very abundant on the river, and nesting. A very choice series of eggs secured.

Chat, Yellow-breasted. Abundant and vociferous all along the river. We found great delight in watching the grotesque evolutions of this bird on the wing. No nests found.

Catbird. A few seen every day. One nest with two eggs found on the 28th.

Coot, American. Only one seen.

Cowbird. Only a few observed. One egg found in a Brown Thrasher's nest.

Curlew, Long-billed. Several individuals seen. Probably nesting.

Cuckoo, Yellow-billed. Very abundant. One nest with five fresh eggs taken on the 28th. (One of these eggs was that of a Black-billed.)

Cuckoo, Black-billed. Two or three birds, and one nest with one egg found on the 29th. A day and a half later the bird was still setting on the single egg.

Dove, Mourning. Excessively abundant all through the hills and along the river. Its nests and eggs were observed every day. Found nesting on the ground many miles from the river.

Duck, Blue-Winged Teal. Many seen, and probably breeding, though no nests were located.

Duck, Mallard. Frequently observed.

Duck, Shoveller. Three or four pair seen.

Duck, Gadwell. One individual seen.

Flicker. None seen, and only heard calling once.

Goldfinch, American. Fairly abundant.

Grosbeak, Blue. Fairly abundant; both males and females being observed. No nests found.

Grosbeak, Rose-breasted. One pair only observed.

Grosbeak, Black-headed. Quite abundant in varying phases of plumage.

Grouse, Prairie Sharp-tailed. Quite abundant. A set of ten eggs taken on the 29th.

Grackle, Bronzed. Observed two or three times.

Hawk, Krider's. A pair were nesting near our camp at the forks and were under close observation for two days. There was no doubt of their identity, as their peculiar coloring was very conspicuous. The birds were not taken, but on the 25th I took two eggs from the nest which were heavily

The Warbler

incubated. They were of large size; one beautifully marked, the other one white.

Hawk, Swainson's. Abundant and nesting. Four sets of eggs were taken with only slight incubation. Nests mostly in small trees not over ten or twenty feet from the ground.

Hawk, Marsh. Twice observed.

Hawk, Sparrow. Only one seen.

Heron, Great Blue. Often seen. Reported to be nesting in a clump of bushes ten miles out in the hills.

Jay, Blue. Fairly abundant.

Kingbird. Abundant, but not nesting.

Kingbird, Arkansas. Two observed.

Kingfisher. Only a few observed. One nest was opened on the 29th and found to contain five nearly fledged young.

Kildeer. Abundant and nesting.

Lark, Pallid Horned. Abundant at the forks. One nest with four eggs taken on the 23rd.

Meadowlark. Very abundant. Several nests and eggs were observed.

Mockingbird. One observed.

Nighthawk. Very abundant.

Oriole, Baltimore. One, only, seen.

Oriole, Orchard. Several seen and heard.

Owl, Great Horned. A pair had a nest in a cavity in the clay bank above the river, on the opposite bank from our camp at the forks, containing three young two-thirds grown. Parents were observed feeding the young during the day time (cloudy).

Owl, Long-eared. One, only, seen.

Owl, Burrowing. Seen in all Prairie-Dog towns.

Owl, Screech. One found nesting in a hole in the river bank. One young, only. Another was observed to fly from a cavity in a cottonwood tree in which there was an occupied nest of Swainson's Hawk. The cavity contained five young Owls. They might have been Saw-whets. The glimpse we had of the old bird leaving the nest was not sufficient for positive identification.

Prairie Hen. Not abundant, but they could be heard on the "Booming" ground in the distance nearly every morning.

Sanderling. Two good sized flocks observed on some flats as we came down the river.

Sandpiper, Bartramian. Frequently seen.

Sandpiper, Spotted. Fairly abundant.

Sandpiper, Least. Observed but once.

Sandpiper, Semi-palmated. Several observed on the 27th.

Sora. None seen, but a beautiful nest with ten eggs taken on the 29th.
Swallow, Bank. Fairly abundant. Some large colonies observed nesting in the high clay banks. Six fresh eggs taken on the 28th.

Swallow, Barn. Nesting at the Ranch.

Swallow, Cliff. Only seen once.

Sparrow, English. One or two visited our camp at the forks. They were also nesting in the lower part of the Krider's Hawk's nest at the forks, many miles from any habitation. Nesting, also, at the Ranch. Incidentally I observed several pairs nesting in washouts in a perpendicular clay bank near Omaha.

Sparrow, Grasshopper. The most abundant bird throughout the Sand Hills. Its diminutive song could be heard at all times and on all sides. Only nests in course of construction were found.

Sparrow, Lark. Very abundant. Four heavily incubated eggs taken near Thedford on the 30th.

Sparrow, Field. Fairly abundant.

Sparrow, Lincoln. One specimen taken.

Tanager, Louisiana. Two beautiful males seen at the forks.

Towhee. Abundant, and nesting.

Thrasher, Olive-backed. Seen and heard singing several times.

Thrush, Brown. Fairly abundant, and nesting.

Robin. Only one seen.

Vulture, Turkey. Observed several times. An evident nesting site was found on a cliff. It contained one wing feather, the corresponding feather being missing on the wing of an agitated Vulture in the 'air above us. A fertile mind might make out of this a pretty story of a Vulture selecting a nesting site and placing therein a quill as evidence of possession.

Vireo, Wabbling. Abundant.

Vireo, Red-eyed. Only a few seen.

Warbler. Maryland Yellow-throat. Fairly abundant on the river.

Warbler, American Redstart. A few observed every day.

Warbler, Tennessee. One taken.

Warbler, Black-poll. A pair taken.

Woodpecker, Red-headed. Very abundant. Evidently migrating.

Woodpecker, Lewis. One seen at the forks.

Waxwing, Cedar. Four or five only seen.

Wren, House. Seen a few times, only.

Wren, Rock. One taken at the forks.

Birds Observed on a Fall Trip to the Dismal River

By John Lewis Childs

DURING the last of October, 1906, 18th to 27th, I was a guest at Black's Ranch on the Dismal River, Thomas County, Nebraska. I went there for a few days' Duck shooting, as the river fairly swarms with wild fowls of many species at that time of the year. While there I took notes of the various birds seen, and recorded forty-nine species, as follows:

Black Bird, Redwing	Junco, Slate Colored
Black Bird, Brewers	Jay, Pinion
Coot, American	Killdeer
Crow, American	Longspur, Lapland
Crane, Sandhill	Lark, Meadow
Crane, Whooping	" Horned
Crossbill, White Wing	Magpie, American
Duck, Mallard	Pipit, Amerian
" Canvas Back	Quail
" Black	Robin
" Blue W. Teal	Shrike, Northern
" Green W. Teal	" Loggerhead
" Shoveller	Solitare, Townsend
" Bufflehead	Sparrow, Harris
" Pintail	" Song
Dove, Mourning	" Tree
Eagle, Golden	" Domestic
Flicker	" White-crowned
Goldfinch, American	Snipe, Wilson's
Grouse, Prairie Sharp Tailed	" Yellow Leg
Hawk, Kriders	Towhee
" Sparrow	Wren, Long-billed Marsh
" Marsh	Warbler, Md. Yellow Throated
" Pigeon	Woodpecker, Downy
" Rough Legged	

Breeding of the Snow Goose in Nebraska

Editor of the WARBLER:

I found a nest of the Snow Goose on the 3rd of June last. It was about three hundred (300) yards from the Platte River in a swampy meadow. I flushed the old bird off the nest but she only flew a short distance before lighting. The nest contained eight (8) buffy white eggs. On visiting it again two days later I found it had been destroyed, probably the work of a coyote. The pair of Geese stayed in the vicinity of the nest for a week or more and then disappeared.

Cyrus Black, Kearney, Nebraska.



A Good Breeding Season

AS far as Long Island is concerned the season just passed has been an exceptionally favorable one for birds. Breeding seems to have been successful to an unusual degree. Nesting began early and lasted long. Many Robins were coming out in August, and a Song Sparrow was observed constructing a nest as late as August 20th. The lack of rain and particularly severe storms during June and a greater part of July was favorable to all birds.



Late Breeding of the Field Sparrow

ON August 26th a nest with three fresh eggs of the Field Sparrow (*Spizella presilla*) was found near the village of Floral Park.

The Water Thrush

By Miller Hageman.

Silently down the mountain's crown
 The silver-threaded streamlet rushes;
 As o'er the steep with flashing leap,
 Its liquid laughter glints and gushes.

Round cliff and crag and snarling snag,
 Coqueting with fantastic caper,
 Upon its spray the rainbows play,
 Through curling wreaths of cloudy vapor.

By rainy falls it loudly brawls
 Across its beds of winking pebbles;
 Trilling o'er spars of tinkling bars,
 The flutter of its flute-like trebles.

Through rocky rifts its rumor drifts,
 Through cowslip and through cress it passes;
 As with sweet glints of peppermints,
 It gurgles through the tangled grasses.

And in an out and all about,
 With many a whim and many a whimple;
 And many a nod of golden-rod,
 Its dappled waters dusk and dimple.

Till, darkening in from lin to lin,
 'Mid evergreens and listening larches,
 It loves to hide with languid glide
 Along its echoing isle of arches.

See, on a rock the Throstle Cock
 Shakes out its spray of airy sparkles;
 As round the smile of that small isle,
 The dimly-lighted valley darkles.

And still it gleans about the greens,
 And plunges as the grayling passes;
 Where, open-eyed, below the tide,
 It moves among the water-grasses.

And who hath heard, thou brook-taught **bird**,
 The rapture of thy rhythmic gushes,
 The liquid strain of whose refrain,
 Mocks back the music of the rushes?

O silver tongue so finely strung,
 O trickling words, O pebbly trilling!
 O holy hush, O Water Thrush,
 The dewiness of song distilling!

The Humming Bird

By Miller Hageman

From summer isles of song I stray,
 With many a glittering pendant;
 A feathered kiss flower on my way,
 So rare and so resplendent.

Unravished by a touch of earth,
 Chaste as the sistered seven,
 My bright virginity of birth,
 The livery of heaven.

I build my wondrous nest apart,
 Where none may fly or follow;
 The rarest gem of avian art,
 That hides by hill or hollow.

A dainty little exquisite,
 As goblet-days brim deeper,
 I brighten in the blazing heat,
 Round columbine and creeper.

On humming winglets, hour by hour,
 I loiter at the lattice,
 To sip the nectar from the flower,
 Where twines the blue clematis.

I rouse the bee and butterfly,
 Within the blossom sunken,
 I spill its cup and summer by,
 With honey-dew half drunken.

And still at tropic noon I stray,
 Where the wild cataract whitens;
 Drinking the cooling drops of spray
 O'er which my rainbow brightens.

To hover, hover, closely round
 The honeysuckle covers;
 There's many a song of sweeter sound,
 But ne'er a song that hovers,

I take the light that morning flings,
 Athwart the moated granges,
 Till with its tints upon my wings,
 My plumaged prism changes

The Warbler

The soft hues of the opal shine,
 The sapphire bright and sunny,
 And now the topaz gleam is mine,
 And now the chalcedony.

The rich carnation of the rose
 Shrinks, ere my love is spoken;
 The passion flower my wings unclose,
 blushes and dies heartbroken.

Beneath the bower of lady fair,
 A spell of charms I lend her,
 To shame the jealous solitaire,
 That eyes my spendthrift splendor

To hover, hover, where the round
 Red turnip-creeper listens;
 There's many a song of sweeter sound,
 But never a song that glistens.

But when the scarlet pimpernel,
 With its unfailing warning,
 Shuts to the coming shower its bell,
 Just opened at the morning;

I drop my low sweet hover-song,
 With which the air is humming,
 And darting upwards swift and strong,
 To show that rain is coming,

I dash down from that dizzy height,
 With pinions loudly whirring;
 Till, with my headlong rushing flight,
 I set the thicket stirring.

And when the sun upon the shower
 Shows but for one bright era
 The splendor of the jewel-flower,
 The sun-dew on drosera,

I glitter, glitter, all day long,
 A little wingless wonder;
 And still will shine the hover-song
 When dies the deafening thunder.

Then wreath ye vines that love her so,
 A spell that naught may sever,
 Nor let the lovely prisoner go,
 From that fair bower forever.

Catalogue of the John Lewis Childs Library of Natural History

THE following is a list of the books in the John Lewis Childs Museum and Library of Natural History. This list is printed from the linotype slugs of the reference catalogue of the library, the descriptions being decidedly meager, just sufficient to identify the book or any particular edition of a standard work. Total number of volumes 1362

Ornithology

542 BOUND VOLUMES

AUDUBON. *American Ornithological Biography*. 5 Vol. Text, and 4 vol. Elephant Folio Plates, the famous Dr. Shattuck copy with 435 plates carefully selected and colored by hand under Audubon's personal supervision. Author's autograph in first vol. text. Edinburgh, 1831-49.

AUDUBON. *Birds of America*. 7 vol. 205 to 457 p. each and 500 superb colored plates. N. Y. and Phila., 1840-44.

AUDUBON. *Synopsis of Birds of N. A.* 359 p. Edinburgh, 1839.

AUDUBON. *Autograph Letter*, regarding the Forked Tailed Hawk, May 6, 1830.

AUDUBON. *Audubon and His Journals*, 2 Vol. 532 p. each. Illustrated. New York, 1897.

ADAMS. *The Bird World*. 464 p. Illustrated profusely. London, 1885.

ALLEN. *Birds of N. H.* 222 p. Manchester, 1903.

ATKINSON. *British Eggs and Nests*, 182 p. Col. plates. London, 1861.

ALLEN. *Masked Bob-White*, 20 p. Col. pl. N. Y., 1886.

ARUGRIMSON. *Birds of Greenland*. 62 p. Boston, 1891.

APGAR. *Birds of United States*. 415 p. Illustrated. New York, 1898.

ALPERAKY. *Geese of Europe and Asia*. 195 p. Colored plates. London, 1905.

ALBIN. *Natural History, Birds*. 3 Vol. Many colored plates. London, 1738.

ANTHONY. *Birds of San Pedro Martio*. Lower California, 1893.

A. O. U. *Check List of North Am. Birds*. 372 p. New York, 1905.

BENDIER. *Life History of North Am. Birds*. 2 Vol. 24 colored plates. Washington, 1892.

BENDIER. *The Cowbirds*. 35 p. Illustrated. U. S. Nat. Mus. report, 1893.

BARTON. *Nat. Hist. Pa.* Part I. Birds. Philadelphia, 1799.

BAILEY. *Our Own Birds*. 265 p., ill. Philadelphia, 1875.

The Warbler

BARROWS. *The English Sparrow in North Am.* 405 p. Illustrated. Washington, 1889.

BREWER. *American Ornithology.* The writings of Wilson, Audubon and others, with notes by Jardine. 746 p. Illustrated. New York, 1839.

BREWER. *North Am. Oology.* 132 p. 5 colored plates. Washington, 1857.

BONAPARTE'S *Am. Ornithology.* Birds of the U. S. not given by Wilson. 4 vol., quarto. 27 colored plates. Phila., 1825-33.

BONAPARTE. *Comp. List of Birds of Europe and N. Am.* 67 p. London, 1838.

BURROUGHS. *Life of J. J. Audubon.* 142 p. Boston, 1904.

BLANCHAN. *Game Birds, (Birds that Hunt and are Hunted).* 352 p. Col. Plates. New York, 1899.

BLANCHAN. *Bird Neighbors.* 234 p., 52 col. pl. N. Y., 1901.

BATES. *Game Birds of N. Am.* 118 p., ill. Boston, 1896.

BABSON. *Birds of Princeton, N. J.* 82 p. Princeton, 1901.

BAIRD. *Review of Am. Birds.* 450 p., ill. Washington, 1864.

BAIRD, BREWER & RIDGEWAY. *North Am. Birds.* 3 vols., about 600 p. each, 533 ill., 545 colored heads. Boston, 1905.

BAIRD, CASSIN, LAWRENCE. *Birds of North Am.* 2 Vol., atlas, 100 colored plates. Text. 1005 p. Philadelphia, 1860.

BAIRD. *Birds of Mexican Boundary.* 32 p., 25 superb colored plates—(part of M. B. Survey). Washington, 1858.

BAIRD. *Birds of P. R. R. Survey.* 1000 p. (Vol. IX of P. R. R. Survey Report.) Washington, 1856.

BAIRD, BREWER AND RIDGEWAY. *Land and Water Birds.* 5 Vol. 3 Vol. Land Birds, about 600 p. each, with 64 fine colored plates. 2 Vol. Water Birds, about 537 p. each, and many fine hand colored plates. Boston, 1874-84.

BURNS. *Monograph of the Flicker.* 83 p. Oberlin, 1903.

BURNS. *American Crow.* 41 p. Autograph, Oberlin, 1895.

BUFFON. *Nat. Hist. Oiseaux.* 10 Vol. Text, 5 vols. plates. Over 1000 fine colored plates. Paris, 1772.

BAILEY. *Birds of Western U. S.* 512 p. Finely illustrated. Boston, 1902.

BUTLER. *Birds of Indiana.* 672 p. Illustrated. Indianapolis, 1897.

BICKNELL. *Summer Birds of the Catskills.* 56 p. New York, 1882.

BEEBE. *The Birds.* 496 p. Illustrated. New York, 1906.

BELDING. *Land Birds of Pacific District.* 274 p. San Francisco, 1900.

BRUNNER. *Nebraska Birds.* 178 p. Illustrated. Lincoln, 1906.

BRYANT. *Col. Birds of Lower California.* San Francisco, 1898.

BRASLIN. *Birds of Long Island, with Biography.* Report of Linnean Society of New York, 1907.

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JOHN LEWIS CHILDS, EDITOR

Breeding of the Sharp Shinned Hawk on Long Island

By John Lewis Childs

ON May 15th while walking near a thicket of tall cedars at Smithtown, L. I., I was startled by the cry of a Sharp Shinned Hawk which, taking a short flight, perched upon a tree near me. As I moved about the bird would leave his perch, utter his alarm notes and alight again nearby, which action convinced me that a nest was not far off. After a close scrutiny of the cedars I located the nest in the top of one of them upon which the female was sitting. The nest was found to contain three eggs heavily marked and of unusual beauty. Though I have examined more than one hundred sets of eggs of this bird, this was with one exception the most beautiful I ever saw and now rests in my cabinet. The bird did not return to the nest to lay another set, but as they were seen two weeks later in the vicinity one may presume that they nested not far away.

* * * *

Last Record of the Breeding of the Bartramian Sandpiper in Maine

I FOUND the past summer in an old collection of birds' eggs at Livermore, Maine, two sets of Bartramian Sandpiper with data as follows: "Livermore, Maine, June 10, 1893. Four eggs; nest in a field on the ground in hole made by bird. No lining." "Livermore, Maine, June 13, 1897. Four eggs. Nest found in an old pasture on Butte hill."

Both sets were collected by J. C. Teague, and are now in my collection.

J. L. C.

The Bleating and the Breeding of the Snipe

By P. B. Peabody

WHEN whole-souled, simple-hearted Fred. Maltby, one of THE Bird-Boys, discoverer of the North Dakota colony of the Yellow Rail, wrote me, one fall, that he had made two new discoveries I held my breath; and *read on*: "I have found," —he wrote,—"a new colony of Yellow Rail. It is in a great coarse-grass marsh. To find any eggs would be impossible. But I found one nest of the Woodcock, May 27, with eggs just hatching. You should have seen what a fuss the sitting Woodcock made when I flushed her from her nest in the long meadow grass."

All this happening in northern North Dakota, I sat right down and told Fred things; and then congratulated him on a find which, I doubt not, will never add anything to our knowledge of the habits of the Yellow Rail. And then I fell to wondering whether or not it would ever befall *me* to visit North Dakota again; and flush a "Woodcock" from her *nest* in the *long meadow grass!*

Three years later,—in late May of 1909,—I yielded to the lure, and set out on the mad quest for another set or two of Yellow Rail, in my much-endeared old coulee-meadow in central North Dakota. I had quixotic things in mind: I would strike northward and visit Maltby's new Rail colony; I would find, say, four sets of Yellow Rail; I would then make a flying cruise to Leech Lake, Minnesota, en route for home; and would settle, for all time, while there, the status of Mr. Currier's nondescript breeding thrush! In point of fact I headed straight for the old familiar region. Leaving Jamestown, at mid-day, I strained every sense to catch evidence of the breeding bird-forms of the prairies. Amid pouring rain I had begun to descry soaring and singing Lark Buntings an hour before reaching Jamestown; and was as light of heart as any set-free school boy when, a few miles out of Jamestown, I set eyes on my first Burrowing Owl,—bowing gravely at me, along the right-of-way. Amid pouring rain I reached the railway terminus; five miles from my *goal*. Five o'clock, next morning, found me plodding southward, through a drizzling rain, toward the Rail Meadow.

Everywhere, in the town pasture and along the roadways, were scattered pairs of Chestnut-collared Longspurs. Quite like old times it seemed to

run across four nests, all amid the close-cropped grass, in the same pasture. There would be just the fan-like spreading of a gray-and-white tail as the sitting Longspur trailed herself away from her eggs; her mate, the while, floating, butterfly-like, in air,—that crisp, clear,—“Ruderit,” gushing from his throat. (In this pasture were just a few pairs of the Lark Bunting: first “homesteaders” in a region wherein dear, dead John C. Knox and I failed to find them, five years ago.) As I passed on, along the fence-less highways, an occasional McCown Longspur, soaring much higher in air than his smaller fellow, would blithely pipe out his barn-swallow-warble-like,—“Trillisth.”

A mile or two out of town a stranger wended its meandering way into view: a Bank Swallow. A mile further on, a deep cut-bank showed evident signs of Swallow occupancy. In how brief a time does a wild country give place for both human and for brute types of civilization: For forty miles before reaching the end of the railway portion of my journey I had found the entire country literally asoak. Miles and miles of inch-high wheat was lifting liliputian green flags of promise above interminable pools of water. But here the land was far more broken; with a much lighter soil. One could pick his way over fairly dry ground. But I reached the margin of a deep drainage-way; what had once been a series of winding marshes, among the hills. The road I had been following had become just a roadway; trailing its purely linear course across what was now a meandering stream, trickling its way across a pasture meadow. Plainly, it was a case of portage.

Plates, camera, bedding, two-days' provision: three trips. But, amid-stream of the initial trip there came to one's ear a wholly new sensation: surely what could it possibly be but the “bleating” of the Wilson Snip?

In intervals of rest, and while re-dressing, the eye sought, wonderingly, for that ventriloquistic tantalus. The ear, meanwhile, was trying to fathom the mystery of the Bleating: was it Throat; or was it Wings? (Tail it most assuredly is *not*: Were it this, the sound would be continuous, like that of the booming Night Hawk; which, as some of us know, intimately, is made with stiffly set, de-curved wings. But the “bleating” of the Snipe sounds for all the world like the winnowing of the wings of whistling ducks; as they scurry by, in mad hurry wrought by fear.) Before I rose to take up, again, the burden and the way, the “bleater” had been sighted, high in air, I watched him; for such an experience might never be mine again.

When, in due time, I broke over the butte-heights and the long, winding meadow met my sight, confusion came over me. For, not a meadow but a lake dawned upon my expectant vision. It was only after a full four miles of walk, adown the coulee, had brought into view familiar farms that I realized how provokingly a treacherous memory and a hidden sun had caused me to go West instead of South. But then; had I not *heard* the Bleating of the Snipe?

Yet, along the undulating route, appeals to every sense beguiled the way. For, how could one imagine how many new birds had been brought, those five fateful years, by change in faunal conditions, into that new region? And what extensions of old-time bounds had been made in that long interval of time? Ah,—there sounds a Bobolink!—sooner or later there were five or six of him,—and each one blither than his fellow. Moreover,—before I left the portage Coulee, did I not hear a single Yellow Rail, clicking away, far down below, in the over-flowed coarse-grass area of the meadow-pasture? And, was not this the first proven extension of range, from the one breeding colony, evinced in seven years? Another portage, across a side-coulee, involved a comical dilemma: wading, knee-deep, in miry meadow, I started a meadow lark from her nest:—a meadow lark nesting over the water: One ached to find the nest; yet one could not turn round; nor could one set any portion of his burden down. And so the sitting mother's little act was needless.

Slowly I neared the Rail Colony. Along the butte-crests, all purple with vetches, all studded with boulders, green and yellow with their marvelously delicate lichen, one meandered up and down. Suddenly, from amid the short upland grass, arose against the sunlight an agonized bird, as big as a duck to seeming. Only when she alighted, rods away, did she reduce her dimension to that of a normal "Bartram Plover,"—(or whatever this bird may happen to be called, just now "Upland Plover" it is: *hurrah!*) Just a hollow, was her nest, amid the foot-high grass; with four tempting eggs, all soaking! It being high noon, I turned aside into just that one of the numberless side-coulees down which there poured a tiny stream of purest, coldest water. Ah, here, in all that alkali waste, was to be my mecca for days to come! Filling my bottle I crept beneath the shelter of a great sand rock; for the sun shone down. I knew that rock. Seven years before it had rested fifty feet further up the butte-side, amid the soap-bushes. Then it had sheltered, beneath its lower side, the eggs of a Turkey Vulture: now, at its upper side, nestled what must, perforce, be one of the last of the nests of that vanishing race, the Ferruginous Rough-legged Hawk. As I ate,—drank,—rested,—there came floating to my hearing a soft, uncertain, winnowing sound. It came to one's hearing again and again. But, *this* time, eye vied with ear; and, almost of an instant I was watching that hovering, floating, vacillating Snipe. No human sense could give the human mind impressions more creepily contradictory in their suggestions: could it be,—one asked himself, incredulously, that a sound like that,—so clear, so strong, so musical, so sweet and yet so far away—was produced by that speck of a bird: communicating thus, in his free, wild way, with his mate, hidden, somewhere below, in that acre-ous waste of grass, and rush, and sedge, and water? All afternoon, that day, and all forenoon of the next, saw every

vantage-ground of acquired knowledge utilized in a vain, vain search for nests of the Yellow Rail. One pair were domiciled right opposite the great rock; another held sway twenty rods further in the meadow; a third, still further out; and a fourth, a hundred yards or so to one side of these: all of them in the water-surrounded coarse grass. Fairly from beneath one's very feet came clanking-out that curious, throaty click; always,—and always,—in about the same place. No bird on earth,—or in the water,—is more strangely local in its habitance than this.

Unwelcome happenings, alone, marred the monotony of these long, tiring searches: out from a bog, where the spring-water meandered its way across the meadow, flapped a Mallard from her eight half-incubated eggs. From an isolated bog, nearer land, amid finer grass-growth, flew, from her eleven eggs, as I neared, a female Blue-winged Teal. To avoid the breaking-up of these duck homes, all the finesse of which a veteran bird-student becomes possessed must, perforce, be exercised.

That afternoon, upon the still monotony of Rail-search, there broke, of a sudden, the winnowing of a male Snipe. And straightway, as I fell to watching him, pulling my heavy legs out of the mud, and struggling to dryer land, he came slanting down, from a great way off; down to within a hundred feet, or so, of the meadow-surface. Then,—delicious co-incidence! —his mate was seen to be flying before him. An odd little duet of trickling recitative notes came filtering down to me; as they fitfully chased each other. Just one note of them all comes back to me, tonight; as I take down my Newton and peruse his brief article on the "Bleating of the Snipe." Just the one note, "Djepp," emitted by the male, with beak pointing earthward, could I recall out of all that swift delicious medley. An hour or two later, beneath the most innocent possible prone wisp of wet dead grass, on a small bog, amid the lush young meadow grass, was found the one Yellow Rail nest of the season. The study of this one focal point of the long, hard trip thereafter became centered in this tiny bog. Hardly twenty feet away was a little line left of unmown grass. From this, a number of times, I flushed one of a pair of Nelson Sharp-tailed Sparrows. A tiny beaten-down spot, in the sparse, dead-and-alive grass, bespoke well their purpose there. Ten feet from this, next forenoon, as I was planting the camera for a bird's-eye view, there rose, with startled quackings, a Blue-winged Teal from her twelve fresh eggs: in a most-neat nest, well sunken into one corner of an unmown rectangle of coarse grass and reeds. Twenty feet off, in another direction, as I dragged my way to one side after my plate-box, there fluttered, vacillatingly but silently, from a partly-mown bog, at edge of the rectangle of unmown growth,—that very WILSON SNIPE whose mate had playfully pursued her, across the wet meadow; not many rods from the very spot where-in was built the nest.

And, it was a nest; and it was built. There was no sort of concealment. No site could possibly vary more widely from the norm made known by findings in Utah, along irrigation ditches. And yet, no tyro, most manifestly, was the builder of that nest. Full two inches thick was the mattress of fine grass built into the top of that half-shorn coarse-grass bog. (But one thing observed, those days, gave me more of surprise: the almost-equally thick Rail nest that had been assembled, blade by blade, beneath that slight wisp of wet, dead grass, in that little, low bog; and all carried through an opening in the side that seemed no larger than the runway of a meadow mouse.) No structure of man, beast or bird ever showed more marvelous skill and cunning. Without slightest exaggeration one can say, that not one amateur observer in a thousand would ever examined that bog; in which there was not the remotest vestige of evidence of disturbance, or of anything artificial.

Diving into a little "island" of seven-foot willows I saw and heard delicious things. A whilom Yellow Warbler peered down at me. An occasional sharp whirr of little wings, just above my head, gave proof that some passing bird had unwittingly discovered me. A single Virginia Rail, drawn thither by manifest curiosity, occasionally cackled his doubt a few feet away, in language marvelously like the grunt of a new born pig. The occasional quaint, "Zhay-deal" of an Alder Flycatcher carried me back, vividly, to boyhood days. From the narrow open lagoons, at foot of the western slope of the buttes, a scant eighty rods away, came a charming medley of bird song: Coot, Yellow-headed Black-Bird, an occasional Pied-bill Grebe and many a Sora Rail. From the overflowed coarse-grass area behind me, not a hundred feet, as I had already amply learned, from the domain of one of my pairs of Yellow Rail, the (apparently) sole male Black Rail habitant of the boundless meadow piped his feeble, cheery, "Kick-it,kick-it,kick-it, kick-'e-did,kick-'e-did, kick-'e-did,"-out of the marsh mazes. (I found his nest, five years ago). As I left the willow "bluff" a single witless male Wilson Phalarope rose whimpering from his one precious egg amid the three-inch dwarf rushes; and instantly lay, panting and crying, upon his side, not thirty feet away. It must have been a case of first-fatherhood, I guess; for never did I see a Phalarope, before, make such a fuss over just an egg or eggs. As I approached the Yellow Rail ground for one last search, a Short-billed Marsh Wren or two flew up literally from beneath my feet: (but I was used to that!) Then, just as I reached the swale-edge there dashed into my vision something new, something of rarest occurrence and interest, something I shall never see again. Often, amid the growing short meadow grass, has a Yellow Rail been flushed, at short range; the whitish tips of the wing-secondaries flashing bewilderingly, for a second or two, ere the bird drops out of sight. But now, out of the nearest edge of the dense dead-grass covert

there dashed out, on foot, a superb Yellow Rail. Alternately running, mouse-like, and stopping, in statuesque pose, (just as callow Soras do), he gave me the rarest possible opportunity of viewing his superb colors. In the main he was like a two-weeks-old chicken, in size and bearing. An apparent streaking of lighter and darker chestnut-clay suffused his back; while down the side of the neck, quite broadly, ran a band of brightest chestnut, illy defined. Thrice, for the space of two or three seconds, he posed for me; and then dived, quickly, into the protecting depths of last year's grass. And,—that was all. Search as I might, with energy of hope, with doggedness of despair, no new thing came to light. My Snipes, despoiled, were silent. The sun was waning; and I turned my back upon it all. Rising up the butte-side, I waved farewell to the pair of Marsh Hawks whose four eggs, (three of them abnormally small), I had borrowed for photographing. My Ferruginous Hawk nest, from their grass basket among the roses, was only a bare stone's-toss from my sand-rock. At the butte's top I stood long and watched, at close range, an almost motionless soaring melanistic Western Red-tail,—a most-odd creature, mottled all over, tail and all, quite like a Western Night Hawk. Then I turned my face southward to listen, just once more, to the tinkling, mellow songs of the Baird Sparrow, resounding, everywhere, along the sodden alkaline flats of the plateau. But a few hundred feet from a farm house whose cellar I sought to change plates for my one discovered nest of McCown Longspur,—(beneath a tiny bit of mountain sage, two feet from recently-sprouted wheat, at margin of a roadway),—I heard, in an upland bog that crowned the plateau, the clicking of a solitary Yellow Rail. This, too, was a new record; and it was my last. An hour and a half of trudging brought the duffle-laden naturalist far from the meadows into the rough longspur country. The wheat-elevators of the town loom near. At margin of a side-pasture a female Longspur, beckoning me with her fan, leaves her newly-hatched little ones in their exquisite nest, with white horse-hair lining; the whole nest most-daintily deep-set into the base of a most diminutive rose-bush. Sunset drew on; and a faint glory overspread the Antelope hills, far to the southwest. It was the last. The bleating of the Snipe, the tunk of the Yellow Rail, the effervescent call of the Longspur,—all these, henceforward, are not of experience but of memory. I shall never go back.

Long Island Bird Notes

By John Lewis Childs

THE season's nesting on Long Island seems to have been abundantly successful. Two good covies of Quail on my farm at Stony Brook disappeared during December and were not seen again until May when one covey returned and four or five pairs bred on the premises. Quail have apparently done well in other localities. The severe wind storm of May 21st and 22nd destroyed nearly every bird's nest about my lawn at Floral Park. Robins, Yellow Warblers, Catbirds, Song and Chipping Sparrows alike suffered, most of their nests being wrecked. A pair of Song Sparrows had a nest in a box bush near the house. The violence of the wind upset the nest and the five young perished on the ground. A Robin's nest was blown out of a favorite position in a crimson rambler rose arbor. A nest of the Yellow Warbler in a clump of spirea aurea was badly damaged, but the birds repaired it and raised a brood. Another Yellow Warbler's nest near by located too high up to permit of close scrutiny brought forth only a Cowbird. The head of the greedy fellow was frequently observed sticking out of the nest, and later he was observed in the nearby trees accepting food from his trim little foster parents. I had a strong desire to shoot him, but did not.

Grasshopper Sparrows have been very abundant in and about Floral Park, and a pair of Orchard Orioles nested here, the first in many years, in fact the second record.

Sparrow Hawks again nested just outside the village limits, inside the enclosure of Belmont Park racetrack, where the small boy could only cast his longing gaze through the iron bars of the fence. The House Wren, known only to nest here last year, was again with us. Two or three pairs possibly breeding. Starlings were very abundant, occupying every available cavity in all old decaying trees. A superb nest and set of five fresh eggs of the Meadow Lark was taken in the village limits on July 25th. An English Sparrow made her nest among the branches of a rambler rose hedge, so firmly and securely that it could not be easily removed. A teaspoonful of cayenne pepper put into the nest did not phase the old bird in the least and incu-

bation proceeded until the bottom of the nest was pulled away sufficiently to let the eggs fall to the ground.

It was hard on pussy, but ten felines that strayed into our lawn enclosure looking for birds did not return, consequently all young birds had a chance for their lives when they left the nests.

Although the Black and White Warbler is fairly abundant on the Island, I found my second nest this season. It contained five fresh eggs and was admirably concealed in a little bank bordering a path through the woods at Smithtown. At Stony Brook (Flowerfield) I found the only set of Downy Woodpeckers I have ever observed on Long Island.

The Blue-Wing Warbler was observed on several occasions near Floral Park, evidently breeding.

For the first time in many years I did not observe nests of the Blue Jay in their favorite haunts at Smithtown. The same locality is also a favorite nesting place for the Mourning Dove, but neither nests nor birds were seen there this year. Crested Flycatcher and House Wren were not so abundant in the old apple orchard at Stony Brook as last year.

Meadow Larks were everywhere more abundant than I ever knew them before. Comparatively few Bluebirds have been seen.

On June 20, in company with two friends, I found about twenty nests of the Seaside and Sharp-tailed Sparrow on the salt meadows off Freeport. Some nests were incomplete, others with incomplete sets and full sets of eggs, others with young birds and from some the young birds had already flown. A beautiful nest of each with four eggs was taken and are attractive objects in my collection. The nests of both species are skillfully lodged in the thick meadow grass a few inches above the ground, thus permitting a tide to overflow the meadows to a considerable extent without reaching the nest.

Chat the Pantaloons

By P. B. Peabody

I WANT to tell a few things about the Chat: one of the oddest, most original, most whimsically musical of all North American Birds.

My acquaintance with him began in the 'Seventies, near Faribault, Minnesota; where I found him, once, calmly and silently sitting in the undergrowth amid heavy timber. (This was the first record for the State; though not the first to be published.) Later, I became intimately acquainted with the Chat in the Neosho Valley of Eastern Kansas, in the 'Eighties; finding, there, nest after nest in the vine-mazes and the luxuriant undergrowth of woods and orchards. (And surely no nests, no eggs, are more superb in picturesqueness and in coloring. Deftly hidden they are, too, from the *casual* seeker. But one who has learned may find them readily: he has but to locate a male Chat, making a clown of himself, in the timber; for the benefit of all concerned).

A few years later, in extreme Southwestern Minnesota, I found the first and only nest ever found so far as I know,—in that State and in that Latitude.

In the extreme northeastern corner of Wyoming, that section where the habitats of so many Easterly-Westerly species and subspecies of birds overlap, I became familiar, of late years, with the Long-tailed Chat. This eccentric singer of the night is quite the counterpart of this fellow, in most of his habits and his manners; except that I credit him with being greatly more shy; and especially in the placing and subsequent concealing of his nest. Acquaintance with the Long-tailed Chat began in Sundance Valley, in autumn; as I collected, among rose-thickets of the creek-bottom, now denuded of their myriad leaves, several of the characteristic leaf-rootlet-tendril nests. Right then and there I anticipated an intimacy and a fulness of summer-tide acquaintance with the Chat which was never, in point of actuality, realized. During the three seasons of my stay in Wyoming, professional duty kept me vibrating between Crook county and Weston county: to my deep satisfaction. Crook county was high among the hills; while Newcastle and Cambria, in Weston county, lay at the lower levels of the desert reaches. The barren stretches of sage-brush, in that region, were seamed, everywhere, with gorges made luxuriant by various and splendid shrubbery. (The red gypsum soil, where caked by drouth is about as pro-

motive of vegetation as the top of an adobe hut: under irrigant conditions it is of an almost exhaustless fertility.) One can well imagine, then, that the long, deep canyon gorges between Newcastle and Cambria, in Weston county, Wyoming, are perfectly adapted for summer abodes of the Long-tailed Chat. And there is positively no other area, anywhere, broader or narrower, larger or smaller, that is so intensely crowded, during May or June, with bird-delights as is Cambria Canyon. I have studied it by night and by day; and I have found its bird-treasures infinite.

One who has in him all the homing instinct of any Carrier Pigeon will gladly compass many a weary midnight tramp, in order to reach his own bed. Many a Sunday evening, then, after evening prayer and sermon, have I refused the unbounded hospitality of my Cambria miners; and set out down the canyon, after nine o'clock: for the nine-mile walk to Newcastle.



NEST OF LONG-TAILED CHAT

Really, the charm of those night walks cannot possibly be expressed in words. One hungers after them, in reminiscence; for there is nothing like them, for unexpected (and occasionally hair-lifting) experience, anywhere else in all the world. The wierd glare of the coke-ovens confuses you so that you walk warily along the winding, dangerous road; gingerly watching for the precipitous results of the latest shut-in freshet. And so, for sheer safety, you turn into the railway cuts; preferring to measure ties along the fifteen bridges of the canyon rather than chance a rude rolling, at some sudden break in the road, down, sixty feet or more, over boulders and pine logs, into the slender, cinder-grimy stream. And so, along the railroad cuts; you are brought, silently and suddenly, into close contact with many a shut-in pocket; wherein walled-up moisture has promoted luxuriant

growths of willow, rose, buck-brush and poison oak. Herein lurk many birds; and chiefly the Long-tailed Chat. Those creepy walks, through occasional utter darkness, brought one into contact with sudden surprises. At base of some spur of a side canyon a pair, or maybe even a trio, of male Poor-Wills would make the canyon-walls throb with their symphonically iterated,—“Poor-will-(ber),—poor-will-(ber)”—poor-will-(ber).” Then, twenty steps later, from matted leafy mazes below you, at times not twenty feet away, some Chat would bid,—“Werk”!—Then, “Do-it,”—“Do-it,”—he would say:—then,—“Chi”—(short i)—“chi”—; then, maybe,—“Who-o-o,—who-o-o,—who-o-o,—” in soft, measured, mocking cadences.

A moment later, as you creep onward with the coke-smell borne down into your nostrils on the soft night-wind, you are passing near a little cluster of bull-pines, on the steep canyon-side. Suddenly there smites your ears, from the pines over-head, a loud, clear, horn-like cry. It fairly lifts your hat; and you fall to wondering: is it an Owl,—you query; or is it, maybe, a wildcat? (And you are wondering about it yet). Then, instantly, up pipes the Chat,—just one. (You may hear several at a time, though rarely so); but they are always a hundred yards or more apart. Language is powerless to interpret the sundry calls. [These have a sort of mutual likeness, among different individual singers; yet each has its own distinctions. But a very few of my many notations is it worth while to spread upon this page: Most common, most notable, of these is,—“Gurk”; another seems a possible *mime* of the Robin’s,—“Purp”; a third is,—“Wierd”; a fourth is a compressed, deliberative,—“Huh”,—“huh”—“huh”—: a sort of sardonic laughter. Really, I sometimes fall to wondering whether this apparently sedate bird, which is yet, nocturnally full of wierd, unusual, measured, uncanny sound, is not really possessed of the Devil!]

I have sought much and mightily for nests of the Long-tailed Chat; where nests were manifestly rather plenty. I have found just two nests: (in use).

The one of these had been suggested, the autumn before, by the finding of the deserted nest-of-the-season; now conspicuously crowning one out of thousands in a little patch of roses, in a bend of the canyon-bottom. But it was late-June, the following summer, before I found the occupied nest.

In Kansas, with the Common Chat, one has but to locate a peering, garrulous male, strictly interested in one narrow zone of some dense copse: and the nest of him is as-good-as found. But with the Long-tailed kind it seems quite otherwise. My rose-patch was not so *very-many* times larger than one’s dining room. And yet, although I used to hide, two or three times a week, in passing, where the song of the male betrayed the nest-nearness, it was no use. The song would be silenced. The female would never put herself in evidence: (as the female of the Southern Chat almost al-

ways does). There would be just the flick of a disturbed leaf; then, silence and stillness. It was hence not until the young Long-tailed Chats of my long-scrutinized pair were grown large, hungry and vociferous that the feeding of them betrayed their home.

Then there came to me, by way of compensation, a sheaf of rare experiences. There is always a full measure of triumph in the way one finds a nest, through the imperious, noisily-manifested hunger of fledgling birds; and then secretes himself, close by,—muttering, the while,—“Now I'll find out things,—in spite of you both”: and so you *do!*

The nest lay fairly well-down in the forks of a sturdy rose-bush, right in the middle of the patch,—(of course). It was rather a rude, coarse, Catbird-nest-like basket. But it did ample duty for the lusty three young Chats.

I found that, (apparently), the excrement of young Chats is not, ordinarily, carried from the nest by the parents; but is voided over one side of the nest. The young, at least when fairly well-grown, seem to face always in the opposite direction; and to be fed, always, on that side. If the Long-tailed Chat habitually carries food to the nest, not by flying over the surrounding bushes but by creeping *beneath* them,—(as certainly did both the parents under observation during the two hours of my studying of them),—the discovery thus made was well worth the pound of flesh I sacrificed, then and there, to the deer-flies that unerringly searched me out as I lay among the rose bushes, camera bulb in hand: waiting for opportunities that were *never* afforded me. Despairing of *this* ruse, I gave up the effort to secure either parent Chat upon a photographic plate; and crept, swiftly, while both parents were away, grubbing, to a remote vantage-ground for watching. No use! The ordinary shrill, nasal,—“Ziabe”—call of the Chats,—(softened to a rather tender, “Urv”, as the parent, with a beakful of food, approached the nest, along the ground, beneath the rose-bushes,—would always, indeed, give me a clue to parental approach; but I only once, —for a single swift moment,—detected either parent breaking cover. The rule seemed invariably to be,—approach along the ground; cautious reconnoiter, at foot of the nest-bush, accompanied with soft calls to the young, the while; slow, devious mountings upward, of the food-bearer; with, finally, a swift delivery of a luscious grub into the immense chasm of some one of the three baby mouths.

The conduct of the young birds, as the parents drew near, along the ground, with measured callings, was measurelessly amusing. The nearer the parent came the wider open would fly the three great mouths; the more frantic would become the tiptoed cranings over the nest-edge; and the more crazily imperious the trio of “Tsirips” with which the three frantically responded to the mother-call. As one habitually does, I fell to noting the marks of sex-psychology, between the two parents, in case of this pair of

Long-tailed Chats. In this instance, quite contrary to the general rule, the female was quite the more timid of the two; but she was also the more assiduous. Since a critical listening, on my part, had proven her to be thinner of voice than her mate, a critical comparison of the relative devotion and the apparent emotions of the two became possible; during that most-uncomfortable yet most-delicious two hours I spent upon the hot, shut-in ground, beneath spiny rose-bushes, in the depths of Cambria Canyon

A belated, or possibly a normal second, laying of that same pair of Chats was found, during early-July of the following summer; in a little copse but a few rods from the site of the previous year. The site was at about two feet, in a rose-bush. The finding was the culmination of a number of close searches. It is significant of the shyness of the Long-tailed Chat that neither parent bird was seen, at any time, anywhere near this nest. No apology is offered for the result of an effort to portray, *in situ*, an interesting nest without distortion and without removal of any portion of the surroundings of the nest. Criticism is easy: it is performance that counts. And even a partial performance,—(light and wind permitting no better),—is better than distortions of the stereotyped sort. Deep-set nests, like normal structures of both the races of Chat, must always present grave difficulties for the photographer. But the teaching purpose will ever justify even meager result.

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Authentic Eggs of Cory's Least Bittern

ON May 2, 1909, Mr. O. E. Baynard took at Micanopy, Florida, a set of three heavily incubated eggs of Cory's Least Bittern. The female bird was captured alive on the nest. Although the eggs are in my cabinet and I am glad to have them, it is a pity they were not allowed to hatch and the young birds taken when fledged, or if necessary reared in captivity, to determine the status of the bird which is claimed by some to be a distinct species and by others merely a meleanistic phase of the common Least Bittern.

J. L. C.

Cyanocephalus the Obscure

(BREWER BLACKBIRD.)

By P. B. Peabody

SCANT praise for sturdy pioneering is the pulveric palm reluctantly held-out to such work as THE WARBLER has been doing, without unnecessary fuss, of late years. Whether it be in the elucidation of moments in the *biologia* of some rarest-of-rare North American Birds or in laborious, unrewarded amassing of new and most-important facts germaine to the life of over-looked yet greatly-interesting species, such work, wrought in the true altruistic spirit, can only await the appreciation of accumulated generations of awakened sensibility. To the latter class would be referred the following symposium of many notes from widely divergent breeding areas; concerning a bird which everybody in the mid-West observes, regularly, twice each year; without being in the least conscious of the real character of the bird he is observing. Proud of our acumen, aren't we?

Masses of Blackbirds throng all parts of the Middle States, in spring and autumn. Along the Mississippi Valley, and westward, the Bronzed Grackle, the Common Red-wing, the Thick-billed Red-wing, the Rusty Grackle and the Brewer Blackbird each furnish their contingent to these teeming cohorts. The amateur bird-lover knows a Red-wing,—usually,—but, who knows the Brewer Blackbird? Verily, he that will take the pains to scrutinize the "cyanocephalous,"—the *blue-headed*,—character of the bird he sees; to mark the drabby plumage of the females; and to hear the thin, weak, wiry "tip" of the bird's ordinary call. Isn't that easy?—Well, it is *essential*!

Along the Red-River-Valley of the-North we learn, speedily, to look in right places for the nestings of the Brewer Blackbird. There are two forms of location, perfectly differentiated the one from the other, favored by this very-particular gregarian. The one of these will lie on the wet, willowy, prairie reaches; the other, along the burr-oak and hazel hill-sides that border the winding streams which pierce the nearly-level water-sheds of that great, broad valley. A seemingly curious and contradictory condition seems to be indispensably involved, as a requisite to the use of willowy meadows as breeding places by the Brewer Blackbird. To be available they must have been

burned-over. From this fact one learns how generic, with the Brewer Blackbird, is its uncaringness for covert. As a conspicuous example of this uncaringness let me say; that I once invaded, a search for nests of this bird, a little burned tract lying between St. Vincent, Minnesota, and Emerson, Manitoba. Several nests were found, in this little burned space, at foot of willows and burr-oaks: betrayed, in each case, by the fussy anxiety of both parent birds. But in crossing a bit of closely-mown meadow a Brewer Blackbird rose from before my very feet. A barely efficacious rim of rootlets held the six eggs contained in the nest away from the wet earth beneath them. In this colony of about ten pairs of birds I learned one odd habit the Brewer



NEST OF BREWER'S BLACKBIRD IN BURR OAK

Blackbird has of dragging nesting stuff in to the nest-matrix; instead of carrying it. The accompanying photograph, which clearly shows this habit, was found near Hallock, thirty miles from the St. Vincent site; in precisely the same sort of environ. This photograph reveals the presence, in the nest, of an egg of the Cow-Bird. This is characteristic. Comparatively few nests escape that arrant parasite; which goes to prove the Brewer Blackbird as great a coward as the Cow-Bird is a rogue. (It is well known that few nests of large birds are ever invaded by the Cow-Bird).

The burr-oak hill-side location, of which a photograph is shown, represents a type of location as to which I have no information save my own. The discovery was a real triumph; great as was the labor intervening be-

tween the survey of anxious bevies of Brewer Blackbirds and the finding of the first nest. Yet this was but one of several like surprises.

One who never had the joy of fighting Red River mosquitoes for the sake of all the bird-riches hidden in prairie and marsh must be told; that the under-growth of shrubbery, along the tributaries of the Red River, are fairly luxuriant. They are, moreover, never burned-over. Here, then, are paradox,—and difficulty. Only by dint of heeding the "hot" and "cold" cries of attendant Brewer Blackbirds, whose meaning had all been fathomed through much of greatly intimate and critical sturdy, did I actually *find*,—without flushing a sitting bird,—a nest like that in Photograph II. It lay deep in a mass of green hazels and oaks; well ensconced among thick



BREWER'S BLACKBIRD AT BASE OF WILLOW

layers of dead leaf. In astonishing contrast with the mere mats of rootlet which formed excuse for nests in the hollows scratched on the bare, burned ground of the meadows, these nests amid the leaves were fairly well-made; having grass and weeds inwrought into the fabrics. In northeastern Wyoming the Brewer Blackbird is quite as erratic and as truly gregarious as in the prairie-woodland regions of the middle West. A simulation of the woodland site I found, late in the season; after the locating of several pairs along a steep little gully well fringed with shrubbery, leading up to Sundance Mountain, had yielded nothing to my search. But finally, quite as a matter of pique, I set to work to find the nest of at least one of the

four pairs which I knew to inhabit that gully. The one result is here given, --(Photograph III),--in one of those compromises between density and clearness which every bird-photographer so thoroughly knows,—and so cordially hates. There are here shown a thick, coarse nest on a sheerly steep bank-side, well-grown with shrubs and plants ; and, in the nest, a vigorous, nearly-fledged Brewer Blackbird. Fairly up along the approaches of Sundance Mountain were sundry scattered pairs of these familiar, hysterical birds. I never gave them heed: with nests of the exquisitely-singing little Tolmie Warbler liable to be betrayed to sight in every little bed of goose-berry, *who* would heed a bevy of blackbirds ?

Two years later I chanced upon a new sort of location for Brewer Blackbird, along the prairie-edge of one of the narrow gulches that furrow the earth-clad areas of the sides of Sundance Mountain. (In truth, I found the "deserted village" of a Winter's day; and profited by it the next May-tide).

There was a space, on the hill-slope, wholly given over to buck-brush and rose and goose-berry. Here about seven pairs held undisputed sway, in May. The great nests,—exactly like those of the Bronzed Grackle, barring the mud-plaster,—were sometimes re-used, in my judgment. With that paradoxical contradictoriness of habit which seems so much an essential part of the character of the Brewer Blackbird, the essential feature of the sites in this goose-berry-rose patch seemed to be the existence of dense covert. Indeed, the finding of a nest or two, thus hidden, set me to rollicking about that goose-berry patch ; thrashing the bushes like any wanton boy. It seemed, in the tingling fury of this fun-inspired search, that I just *knew* at what moment a sitting Brewer Blackbird was to emerge, with many a spur and sputter, out of the mazes of some deep goose-berry bush !

(Photograph IV shows this type of nesting-site. It was not found in this colony; but in a patch of goose-berry beside the creek at foot of Sundance Mountain. There was no colony, there). But in that little colony on the side of Sundance Mountain, that heavenly-beautiful place where so many delightful surprises lay hidden, I made one of the really marked discoveries inwrought in my experience with the Brewer Blackbird. (I tell this later). In Mid-June of that same season, I was hunting nests of the Canadian Ruffed Grouse amid the junipers on the second bench of the Bear Lodge Mountains ; a mile south of Sundance. In reaching these "heaven-kissing" heights,—(an altitude of 3000 feet, maybe),—one had to cross a number of tiny park areas ; alternate desert-grass hill-side and gooseberry-plum growth. Along the gully-bottoms were scattered growths of willow trees ; wherein the magpies reveled, in nesting-time. Small pines and oaks grew along the slopes ; and one never knew at what moment some rare bird might give animate or circumstantial evidence of its nuptial habitance. It was a rarely fascinating place. The merely casual note of heed which I gave,

day by day, to fussy Brewer Blackbirds among the plum bushes, became gradually crystalized into curiosity. When this had become formative, it became but the work of a moment to discover a dozen or more of nests of the Brewer Blackbird among the goose-berries. Herein was proven the value of enjoying masses of material for generalization. It is remarkable how slowly the mind often moves in its inductions. I must have examined six or eight nests, or more, each with its full complement of eggs, *or more*; before there burst upon me, all at once, the full realization of somewhat that I had long and feebly guessed-at; namely, that the Brewer Blackbird is, by habit, *mutually parasitic!* A number of the nests found, on this broad plum-bush slope, contained from six eggs to seven. In every case where the eggs were more in number than five the presence of two distinct types of eggs in the same nest became well apparent. With new zest for search, I now re-traversed the entire colony: finding new nests; re-examining those already found; and making many comparisons. The results afforded substantial proof of the validity of the law which I believed myself to have discovered.

And they also explained the mystery that had long hovered over past findings; in regions very far away. They made plain the cause of the several "sets" of seven found in Northern Minnesota. And they explained the most wonderful, the most beautiful, mystery of all: a most marvelous "freak" set of eggs found in that colony on the slopes of Sundance Mountain. At the highest point in the colony I had flushed a peculiarly anxious sitting bird from a "set" of two eggs. At these I had stared long and wonderingly. I had seen many odd eggs of the Brewer Blackbird before; but none, before, one-half so odd as these.

Many egg-students,—for there *ARE egg-students*,—are well aware that, with community-breeding birds, there is usually a great diversity in colors, sizes and shapes, of eggs. This fact had previously been the cause of my ignoring the great contrasts to be found in many large "sets" of eggs of this most freakish of all American Blackbirds. But, with the newly-discovered habit to guide me, I now knew why, in the one nest, I should find one egg of as delicate a blue, (as to ground-color), as any egg of Cuckoo or glossy Ibis; and the other, as rich a (mottled) sepia-tint. I never saw two eggs more utterly unlike; their likeness being one of size, merely. Risking the chance of robbery by some marauding Magpie, I had left my wonderful freak set of two; to see whether the laying mother might not bring-forth a red egg, next; and a yellow one, perchance, the fourth time. But just so soon as it dawned upon me that those two eggs had been laid by different birds, I stalked across the Sundance Valley; climbed the steep lower-slope; flushed my sitting bird; and appropriated the two precious eggs. They proved to be incubated,—both of them,—and in varying degrees.

Passing by the several problems of distributional interest, in connection with the Brewer Blackbird, I wish to close this paper with a suggestion: based upon that well-known logical fallacy,—“induction by simple enumeration”: The twelfth of July, one summer, I found a well-wrought nest of the Brewer Blackbird in a lone burr-oak bush beside a pond, near St. Vincent, Minnesota. All contingent conditions were so in harmony with the well-established facts concerned with the second-nestings of the Clay-colored Sparrow which I was at the time studying that I straightway fell to wondering whether or no the Brewer Blackbird may not, regularly or semi-regularly, lay a second time, normally, each Summer; varying its choice of a site exactly as does the Clay-colored Sparrow by choosing, not a low-lying spot, amid the past season’s growths, upon the ground; but amid the now leafy mazes of some bush. Thence, onward, I sought corroboration; but it never came.

Bashfully, then, I am left hapless in the face of an unsolved mystery, as to the Brewer Blackbird. But a second, equally tantalizing, mystery speedily came to light: (for is not research the step-mother of mystery?)

One may readily infer, from the brief sketches just given; that the Brewer Blackbird is greatly local in its habitances during the breeding time. One finds a colony of these birds; (and these colonies will average only about eight or ten pairs); while successive passings-by, of the locality covered, will reveal that same bevy of anxious, attendant birds. Well, then: such bevies I have several times found habitant about rocky, sage-covered hillsides in the Wyoming desert country; the habitance being literally well-marked by abundant presence of excrement upon the rocks. To some extent the nests of these birds *may* have been hidden in the rather-luxuriant growths of white sage; which, true to its habit, is normally found only along the water-courses. This fringe of white sage extends everywhere along the narrow gulches that are furrowed deep among the desert hills. But even the presence of these will but partially explain the presence of Blackbirds, in fair numbers, along areas where no provenly-fitting nest-places were to be found. Positively, the nests of the Brewer Blackbird, in such areas, *must* be placed on the ground, among the gnarled stems of the black sage. Theoretically, that is “easy”: in point of fact the condition remained for me, two seasons long, a steady, invariable bafflement. A good thing, this, for the character of the Man: but a sore thing, indeed, for the heart of the Boy.

(Foot Note): Readers of *The Condor* will have noted, ere this, the discovery by J. G. Tyler of a new type of nesting for the Brewer Blackbird: behind strips of bark or in deserted flicker-holes of dead pines standing in the water. This, in the Sierras, at 5,000 feet. (See *The Condor*, May, 1909: See also, *The Condor*, Barlow, Jan., 1900; and Bowles, *Birds of Washington*, 47).

EDITORIAL NOTE—Photographs III and IV, referred to by the author on page 18, proved to be too indistinct for successful reproduction.

The Starling

By Henry Thurston

IN the woods about Floral Park this season the Starlings have nested in large numbers. Not many years ago they were rare birds here, being seen occasionally in the winter, in flocks of four or five, feeding on the fruit of the Boston Ivy which covers the brick buildings.

Last fall at dusk one could see hundreds of these birds flying to their rookery. This fall I expect to see three birds to each one seen last year.

The nest of the Starling is generally made in a dead tree; usually one used by a Woodpecker (Flicker) the year before. To this nest a pair of birds return each year; I think, possibly, the same pair, but as I have no way of identifying them it would not be right for me to say so positively. Into the nesting hole each year they carry hay, feathers and pieces of string and make a lining which, in spite of its rough nature, is warm and comfortable.

About the 15th of April the female lays her first set, which is usually seven eggs; this set is completed in seven days. The eggs are a pale bluish green in color and range from the size of a Robin's egg to one a little larger. The time taken to hatch eggs is one and one-half to two weeks; then the trouble begins. The young are the hungriest of any birds I know, and during the day the parents fly busily back and forth carrying food for them.

If one climbs a tree that contains a family of Starlings a hissing noise is heard and on arriving at the opening the always-hungry nestlings will be found with necks stretched at full length and mouths wide open, waiting for food.

During the period of incubation the female sits close and the male, perched on a limb above the nesting hole, whistles softly and acts as sentinel. When the tree is hit with a stick the female comes to the opening and looks around to see what caused the noise. If the blow is repeated she will fly out quickly, uttering a harsh croak and circle around the tree, still crying. Then if not successful in driving off the cause of the disturbance she will settle on a near-by tree and continue this cry, in which the male joins, if he is around.

The song or whistle of the Starling is quite melodious and is usually heard in the early morning or at evening. At such times, as he sits perched in his peculiar manner, bill pointed to the sky and head drawn close to body, with the sun changing his dusky coat to iridescent shades of purple, blue and green, it is a delight to lie upon the grass and look and listen.

Collecting in Northeastern Siberia

By John Karm

I WAS tired of Australia.—One year spent in “the bush” had been sufficient to do away with my illusions as to this semi-tropical country. Not so that I have reasons to regret that I went there, for I can look back upon a series of very pleasant and interesting events and many a “nice time,” and it must be admitted that at least in the beginning I found the sport of chasing kangaroo, emu and dingo fascinating enough.

But after a twelve months roaming about the nature had become nothing short of trivial. I got tired of the endless bush-woods with their naked ground and total absence of underbrush, as well as the wide, almost lifeless sand-fields, the nearly always cloudless sky and the torturing ever-shining sun. And following the old word: “Variatio delictat” I chose a rather extreme change, when deciding to leave for a year’s stay on the Tchoukotsk peninsula, N. E. Siberia, for the purpose of zoological and ethnological collecting.

Together with my friend H. J. Jensen who had accompanied me all the way from Norway, I left Melbourne, March 18, 1908, on the Japanese liner “Kuimano Maru” for Yokohama. From Yokohama we continued the voyage to Hakodate, where we had to spend three weeks awaiting the first ship of the year bound for Petropaulovski (Kamchatka.)

It was a nasty rainy day when we, the 15th of May, left Hakodate on board the Russian mail steamer “Asia” but no sooner was the coast left behind than the sky cleared and we got the most beautiful weather, to last for the whole trip.

The picturesque Kurile Islands gave a splendid view in the bright sunlight. Snow-covered almost to their bases they reminded us that spring had not advanced very far yet in these latitudes (45° to 50°). Still the coasts of the islands were literally all alive with swarming seabirds, and while the steamer worked its way northward we had one day the strange sight of thousands of Red Phalaropes practically covering the surface of the smooth sea for miles.

On May 19 the high, rocky coast of Kamchatka was sighted and noon the next day we entered the Avutcha Bay, where the only town of the large peninsula (the population of the town, 350 inh.) is situated. The country

looked rather wintery yet; hills and lowlands alike were wholly covered with deep snow—the mild weather and some bare patches here and there on the sunny side of the hills were the only signs of the approaching summer.

The natives of Kamchatka (the so-called Kamchathaks) are Russians to-day in every respect except in the traces of the blood of the aborigines which still lingers and indicates their ancestry. Two centuries of inter-marriage with the Russians have lost them their native language, their legends and chief characteristics, theirs when they roamed the mountains and forests wild, untamed barbarians. They wear now the same clothing as that of the Russians and make their living by hunting and trapping, trade with the agents of the Russian government, resulting in them being supplied with all sorts of weapons of the chase and the stream.

A most interesting anecdote of the now extinct Stellers sea-cow was told to me by our generous host, the Manager of the Kamchatka Trading Co., Mr. Von Wildemann-Klopmann:

“Aged fishermen still living in Petropaulovski, do remember that in their youth a strange looking, big animal—unlike walrus or any other sea-animal they had seen during their seafaring days—at a certain season for a great many years visited Avutcha Bay. It came regularly and was seen by many of the villagers, who used to gaze at it in awe, until one summer it failed to make its visit. According to these old fishermen its last appearance must have been more than forty-five years ago.”

Their description of the animal as related to me by Mr. Wildemann answers in every respect to the features of the Stellers sea-cow—and I am convinced that this story is true and that it is the last specimen of the Stellers sea-cow ever seen.

As the state of ice in Anadir Gulf prevents ships to enter those waters till the mouth of July, I was prepared to spend the best part of the collecting season in the vicinity of Petropaulovski.

Owing to the snow that during the greater part of our stay made excursions on land very difficult and most trying, the majority of our outings were made on the water. While the season for the migrating perching birds was not yet in, the bay and coasts swarmed with water-birds, and the following list indicates the thoroughly identified species only:

Tufted Puffin	Slaty-backed Gull
Horned Puffin	European Laughing Gull
Perdix Murrelet	Aleutian Tern
(<i>Bradurhamphus perdix</i>)	Arctic Tern
Ancient Murrelet	Pacific Fulmer
Pigeon Guillimot	Red-breasted Merganser
Pallas Murre	European Teal
Pelagic Cormorant	European Widgeon

Pin-tail Duck	Northern Phalarope
Old Squaw	European Red-Shank
Harlequin Duck	(<i>Totanus calidris</i>)
Golden Eye	Spotted Sandpiper

No kind of Geese, or any species of Eiders were observed. I never saw a Kittiwake on the coast of Alaska—neither any other species of Gulls but those two mentioned on the list. The rocky coast and hilly country around Avutcha Bay was naturally a poor locality for shore birds. The vegetation along the high, weather-beaten coast is confined to a dwarfed sort of pine, that grows in shape of bushes in the grooves of the steep rocks. In more sheltered places, however, alder and cottonwood grow thick and along the valleys in the interior heavy forests of larch-trees cover a large portion of the country.

Here I had the pleasure to renew my acquaintance with my old friend the Cock of the Woods (*Titrao urogallus*) the proud king of the Partridge family. This species is quite common throughout the forested parts of Kamchatka while the Willow Ptarmigan is common all over the country.

The loud, melodious song of the Kamchatkan Cuckoo was heard June 5, and at that time most of the migrants had arrived. Perching birds shot for my collection were of the following few species:

Black Wagtail (<i>Motacilla lugens</i>)	Kamchatkan Magpie
Siberian Yellow Wagtail	Kamchatkan Raven
Gustavis Pipit (<i>Anthus gustavi</i>)	Black Crow
Chloris sinica kawarabiba	(<i>Corvus corone orientalis corneille</i>)
Kamchatkan Purple Finch (<i>Carpodacus rosea</i>)	Nutcracker (<i>Nucifraga caryocatactes</i>)
Kamchatkan Willow Bunting (<i>Emberiza rustica?</i>)	Osprey
	Rough-legged Hawk

Our stay at Petropavlovski was not to be quite so long as I expected. With a steamer that called at the town and was bound to Anadir Bay for salmon-fishing, I arranged a passage—and left the place on June 21. The state of ice along the northern coasts proved to be exceptionally bad this year. Already at Karaginski Island we met tight pack-ice and the ship had to seek shelter at Tymlot river, N. E. Kamchatka, for five days. The surroundings of the river consisted of tundras, to the north of which a big lagoon about five miles across was situated, separated from the sea by an equal long, narrow sandspit. A few shore birds were found here:

Kamchatkan Oystercatcher	Pacific Dunlin
Mongolian Plover	Limonites ruficollis.
	Northern Phalarope

Fresh eggs were found of Arctic Tern, Red-throated and Gustavis Pipits and Lapland Longspur.

At the end of the time stated the ice threatened to close us in, so the ship had to move up along the coast and seek the natural harbor of Baron Korfa Bay, awaiting there the time when it could be considered safe to make the final dash for our destination, Anadir Bay.

The Bristle-thighed Curlew was found common in Baron Korfa Bay, also the *Totanus glottis* was often observed. One day (June 27) on the mud flats laid bare by the low tide I discovered a flock of large Sandpipers that I immediately saw were new to me. Three of the birds fell at my shot and by examination proved to be Gray Knot (*Tringa crassirostris*.) They were found to be all females, having already laid their eggs.

On July 1st. we started on the last part of our voyage northward and after some bucking with more or less open ice finally managed to get into the Anadir Bay the 5th of July (1908). The landscape around Anadir Bay is mostly lowland, consisting of tundras and low, naked hills. No tree of any kind is found in the vicinity of the Bay, but in well sheltered places willows were found, reaching a height of four feet at the best. The wide, grassy fields with their countless lakes and lagoons make an ideal goose country.

Unfortunately the summer had advanced too far to give success in egg-collecting this year. The very first day on shore (July 5) I chanced to find a nest of the Gray Knot but the eggs were too much incubated to be blown. This nest was situated on the very ridge of a hill, on a dry, stony and moss grown plateau, and taking the eggs for fresh ones I killed the parent bird and packed the eggs to camp. To my great disappointment they proved to be almost ready for hatching and the shells so weak that they cracked all around by the least little pressure. The only bird seen and shot at the nest was found to be the male.

In the same locality as was found the nest of the Gray Knot a large family of Rock Ptarmigan chickens was observed, the young only a few days old. The only fresh eggs found were those of the Pomarine Jager. All observed perching birds had young at the time of our arrival in the Bay. The young of the Snowflake were even seen flying.

My data of nestlings of the summer of 1908 are following:

- July 7. Snowy Owl: Youngest nestling 8 days old.
- " 10. *Limonites ruficollis*: 5 days old.
- " 14. Pomarine Jager: 5 days old.
- " " Gray Goose (*Anser segetum*?): New hatched young.
- " 19. Snow Owl: New hatched young,—one egg left yet.
- " 23. Old Squaw: 5 days old.
- " " Peregrine Falcon: Youngest nestling 8 days old.
- " " Raven: Young apparently just left nest.
- " 27. Dunlin: Half-feathered young.

July 27 Red-throated Loon: newly hatched young.
 " " Vega Gull: 5 days old.
 Aug. 5 Red Phalarope: flying.
 " 6 Northern Phalarope: flying
 " " Spotted Sandpiper: flying.
 " " Pintail Duck: 10 days old
 " " Kennicott's Willow Warbler: flying.
 " 9 Long-tailed Jager: flying.
 " 14 Limonites Subminuta: flying.
 " 21 Horned Puffin: newly hatched.
 " 22 Black-billed Plover: flying.
 Sept. 5 Pacific Eider: half-feathered.

The Yellow-billed Loon—though quite commonly seen in the bay and at sea—I never succeeded in locating as to the whereabouts of its nesting place. I never once observed this bird in the lakes or lagoons, neither did I see any young in the fall of the year.

On our excursions around in this country we naturally often met with the natives—the so-called Tchoukchees. The greater part of those living around the Anadir Bay are "deermen," i.e.: reindeer-herders just spending the summer near the coast, ready to leave for the interior hundreds of miles east on the first frost in the fall. But there are also natives of the same race who make their living solely by hunting and fishing in the bay and the streams; the salmon, which they dry in large quantity for the winter, being the most important factor in their menu. Another great source of food supply is furnished by the caribou herds in the fall when the wild deer cross in vast numbers to the south side of the Anadir river. The native hunters wait for the deer at that time, hidden in light boats under the high banks of the river, and when the animals in large bands are swimming the stream they paddle out as far as they can into the herd, killing as many as they can manage. No guns are used in this sport as the reports from them would frighten the other animals bringing up the rear. The deer are simply killed with spears, weapons in the use of which the natives are very adept.

Brown bears are numerous up the rivers but rare on the naked flats along the coast. I happened however to meet and kill one of these brutes only a short distance from our camp at the bay; and, by the way, it was the biggest and finest specimen of its tribe I ever stumbled over.

The sad part of my story is now to tell. After some searching about we found what would make an ideal winter camp on the north side of the bay about twenty miles from our present place of abode. On a very nice day we left the southern shore of the bay, which at this place is about ten miles broad, with a heavy load in our dory; but only a few miles off the land a strong wind began to blow from the south. In the middle of the bay we

found the current running very hard and with a choppy sea besides, but the wind was too strong for us to get back to the southern shore. So there was nothing to do but to take the chance and keep on the course.

Immediately as we struck the current the waves began to wash over the gunwales of the boat and before we had time to throw any of the load overboard it filled and sank. The dory got rid of its heavy load of camp supplies and came to the surface and we clung to it. It was the 8th of September and the temperature of the water surely very near the freezing point, and as we drifted along, more in the water than above and five miles from the nearest shore, our position was almost beyond hope. First we had to witness the drowning of my faithful greyhounds, that had followed us all the way from Australia. They could not get on the boat with us, and refusing to leave us and swim ashore, they kept swimming around and around till they got numbed and finally drowned before our eyes.

We spent hours with the wrecked boat, and as the darkness came on and the cold increased Jensen got more and more numbed and began to lose his grip and slip off into the water. I chanced to get hold of him every time and pulled him up on the boat again, but discovered soon, to my grief, that he would not last till we drifted on shore. And so the time came when he vanished forever into the darkness.

I shall not try to describe my feelings in the long hours spent alone on the wrecked boat, but only state that by mere chance of luck I drifted past a spit of the northern shore close enough to be heard by natives who came to my rescue in a large skin boat. I figured then to have spent nearly six hours in the water and was unable to walk. The natives had to carry me from their boat to their skin-house, where I was helped to undress and bedded in deerskin robes.

Next morning, after a weary sleep, I found the ground covered with snow. Of course I had now to give up my plan of wintering in Siberia. Besides the loss of my sole companion, the most of my provisions, guns and ammunition were gone and the only thing to do was to seek the Northeastern Siberian Co's station at the mouth of the bay and wait for the first ship to take me to some American port. What was left of provisions, etc., in my camp I gave to my friends, the Tchoukchees, for service and hospitality rendered me, and decided to spend the winter in Nome, Alaska, and in spite of my bad luck this year to return next spring, I took passage with the American gasolene schooner, P. J. Abler, arriving at Nome on October 5, 1908.

(To be Continued.)

Supplement to the Catalogue of Natural History Books in the
Childs Museum and Library

(A complete Catalogue up to this year was published in *The Warbler* of
last year.)

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* * * *

The Ruff in Texas

A SKIN of the Ruff (*Pavoncella pugnax*) has recently come into my possession which was taken at Padu Island, Texas, December 12, 1902.

J. L. C.



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BULLETIN OF THE CHILDS MUSEUM OF NORTH AM. ORNITHOLOGY
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JOHN LEWIS CHILDS, EDITOR

Long Island Bird Notes

WEATHER conditions on Long Island the past season have been generally favorable to birds during the breeding season. All the common species have been abundant and some of the rarer ones more in evidence.

The Black-throated Green Warbler breeds freely at Flowerfield. Several pairs lived in a small patch of cedar trees and reared their young the past season.

Two years ago I found the Northern Hairy Woodpecker breeding at Smithtown. This year I found a pair with a brood of young at Flowerfield which appear to be of the Southern type.

I have never seen or heard of the Least Flycatcher on Long Island until this year. One pair was found breeding in my orchard at Flowerfield.

A pair of Song Sparrows bred three times this season in my vegetable garden at Floral Park. They first built in some half-hardy shrubbery plants that were wintered in a cold-frame. Next in a bed of beets on the ground, and next in a tomato vine. All three nesting sites were within ten feet of each other. The last brood left the nest about September 1st.

Starlings are almost overwhelming in number. Evidently each pair raises twelve to twenty young in a season.

Each year I am more and more impressed with the destruction to bird life by Crows. A study of the food of the Crows and their nestlings during the breeding season will, I believe, reveal some startling facts. There is no doubt but that the principal food of Crows during May and June is the young and eggs of smaller birds.

My observations point to the same condition with the much-protected and protected Screech Owl.

For the past 40 years no Whippoorwill has been heard in Floral Park until this season. One was heard singing for one night only, in July.

J. L. C.

Collecting on Tchonkotsk Peninsula

By John Koren

(CONTINUED FROM LAST ISSUE.)

THE spring and the first part of the summer, 1909, was more windy and rainy than usual on the Behring Strait coast of Alaska. Although these circumstances cannot be considered to be the most favorable ones for the field collector, they might, on the other hand, have had some influence as to the early "break-up" of the ice in the Behring Strait and adjoining part of the Arctic Sea. For it is said that seldom has the navigation in these waters in the early summer been less troubled with ice than this year.

I had arranged passage with a small gasoline schooner named "Teddy



"**Teddy Bear**," the Trading Schooner on which
I Made My Travels, 1909

"Bear" that was to leave early in June for a trading trip up the Arctic Coast of Tchonkotsk Peninsula. The idea was to follow the ship as far as it could get for the ice, and then go on shore to spend a few weeks till the ship came back on its second "tour" to pick me up.

When the appointed time for the departure came, and I was all ready to leave, I learned to my disappointment that there were some preparations to be done with the vessel, which would take a few days. That time being past I was told it would take a few days more before the ship was wholly fitted up, and so on till I in this way had been hanging around the City of Nome more than two weeks before she really was ready to leave. During

the whole of this time the ship was "supposed" to sail in "*a couple of days*" or as soon as she was ready, so fearing to lose the chance I could not leave for longer excursions; and as the surroundings of Nome are a very poor collecting field—most every square foot of ground having been or is operated with machinery of all kind and descriptions in the gold-mining line—I lost in this way the most valuable two weeks of the season.

At last I got on board, though, and with a nice southwest breeze "Teddy Bear" ploughed her way up the Behring Strait. But the wind soon became more fresh than agreeable and developed into a gale, and as it grew foggy besides we had to seek shelter and anchored therefore on the western coast of Big Diomede June 24, after 18 hours sailing from Nome.

In form and nature the two Diomedes are very much alike, the western one only being so much bigger than the other. Only in a few places are



Little Diomede Island. My Own Tent in the Foreground



Least Auks on the Little Diomede

the islands accessible as the coast line in most places consists of more or less perpendicular rock-walls, often exceeding a height of a hundred feet. But both of the islands have a little beach line on their western side, each offering space enough for a little Eskimo village.

The hill-sides of the Diomedes are in most places covered with loose rocks of all sizes, making ideal breeding places for Auks and Guillemots.

The weather was not much inviting for a trip on shore on this very first trip to the Big Diomede. The rain was just pouring down as if the sky had lost its control of her water supplies, and the storm was blowing something fierce. But the seabirds were swarming around us as thick as mosquitoes on a warm summer day. I could not resist the temptation, so putting on an oilskins suit, I spent a couple of hours climbing around amongst the



Little Diomede Looking Toward Big Diomede. Crested Auks and Least Auks
Seen on and Between the Rocks

slippery rocks. But not a single egg was my reward, although I thoroughly searched the nesting places of the *Least Auk*, *Crested Auk* and *Parasauet Auklet*—species which are very abundant here. The egg season for the Auks was evidently not yet in at these high latitudes. Besides the species named, a number of *Pigeon Guillemots*, *Murres*, *Puffins* and a few *Cormorants* were observed—and of course the *Snowflakes* not to be forgotten.

On a little ridge in the hillside a few deserted native huts were situated. They were built chiefly of stones and contained quite a few interesting cooking utensils, different kinds of tools, weapons, etc. A few hundred yards from these huts was a graveyard. The corpses were simply laid in hollows dug out in the layer of big stones and rocks and a few pieces of wood and boards served for covers. These very same hollows were evidently



Cape Prince of Wales Seen From Southeast

later in the season occupied by the Auks as well, for amongst the human bones I found eggshells scattered about, as well as feathers and bird excrement to quite an extent.

Early the next morning (June 25) we left for East Cape but the sea was found too rough for any connection with the shore and we therefore had to pass, going west to the more sheltered village at Whalen (about 15 miles west of East Cape.)

We had to make fast at the edge of the land floe and natives came to the vessel over the ice to make their trade.

The trading stuff of the natives on the coast consists mostly of wal-



East Cape Seen From North, August 3, 1909



Skin House on Arctic Coast, Siberia. So-called "Yarang" House

rus-tusks and skins of polar-bear, white fox and different species of hair seal. Most of the natives along the Behring Strait coast understand English pretty well, but for trading westward on the Arctic coast an interpreter is required, and a young man from Whalen was hired by us for this position. Farther west we met with a lot of open but heavy polar ice, the land floe varying between one to three miles. Trading was made at a few villages across the ice, but a strong southeasterly wind was blowing and the ice constantly moving so the ship had to change its position all the time.

We were, therefore, glad to find the entrance of Shelton river open and we got into the mouth of the same late in the evening of June 26, and had a safe anchorage for the night. Next day, while the trade with the villagers was going on, I made a few hours trip around the hills in the neighborhood.

This hilly landscape is very poor of bird life. The only birds seen were: *Snowflake*, *Longspur*, *Red-throated cipit*, *Swinhoe Wagtail*, *Yellow Wagtail* and *Wheatear*.

Returning to the ship, I found outside one of the native skin-houses an old oil-lamp carved out of a round piece of stone. As it was evidently out of use and thrown away I picked it up and carried it in my hand without asking anyone for it. Seeing a couple of young boys on the beach I asked them to take me out to the schooner in a skin-boat laying close by where we stood. But when I was about to step into the boat an old man of the crowd aboard the schooner, evidently the owner of the skin-boat, started to yell and wave with his arms with the result that the boys tried to prevent me entering the boat. On my asking what the matter was, they pointed at the stone lamp in my hand and shook their heads.

I told them I would pay for it, but the old man kept on yelling, and the boys explained to me that he would not let me take that thing into his boat for any price. As the ship was ready to go away I threw the stone lamp back on the beach, and I was pulled on board. But I afterwards regretted I did not call for the dory of the ship, and in that way save this interesting and rare article, for it is the only stone lamp I have seen yet amongst the Tchonktchees.

Afterwards I asked Sam, our native interpreter, for his opinion of the story about the stone lamp and Sam said "Suppose dead man's lamp no good take him boat." Leaving Shelton river June 27, and running northward towards Cape Serdze we met with very big ice. We kept close to the land-floe but the lead was in some places so narrow that we had to make quite a bumping and squeezing to make advancement. In the larger openings in the ice great numbers of seabirds were swimming around. A band of Eider-ducks was so little shy that the vessel got within shotgun range and I managed to kill four birds from the schooner: three *Spectacled Eiders* and one *King Eider*. This was to be my only opportunity for Spectacled Eiders this year. A few Cormorants (*Phalacrocorax bicristatus*), *Yellow-billed loons* and large bands of *Old Squaws* were also frequently seen on these places. We passed the Arctic circle late at night the same day (June 27), and after rounding Cape Serdze we next stopped outside the village, Tjupka.

This far we had had most disagreeable weather all along, windy, foggy, rainy and snowy. As the only cabin of the ship measured exactly 7x7 feet, exclusive of the space occupied by bunks and cooking stove, etc., it may be understood what kind of comfort we did have when we *had to* stay inside for the nasty weather. The cabin was occupied by the captain, engineer and myself, and there being only two bunks we had to use them "after turn." As



West Side of Kolintschen Island, July 3, 1909

the sun was up day and night, it did not matter what time in the twenty-four hours was used for sleep. There was no room for such a thing as a proper table in the cabin. At meal time therefore special preparations had to be made. Two of us had then to squeeze ourselves up against the bunks in order to give place for the piece of board that served as dining table, which was laid across the room on some special rigging, and we had to keep still just there till the meal was over and the table again cleared and taken away. Joe Benard, the captain, did the cooking as well as the trading, besides mastering the vessel, and considering the circumstances it must be said that he certainly managed all these varying duties in a most satisfactory way. On June 29 we were for the first time on the voyage favored with clear and dry weather. While the ship laid along the edge of the ice outside the village



South End of Kolintschen Island. Ice Opens Up. July 6, 1909

Tjupka, I walked over the pack to investigate the small Idlidlja Island. A number of fresh eggs of the *Vega* and *Point Barrow gulls* and a nest of half-fledged *Ravens* was all to be found there, while in the lead close by a pair of *Marbled Murrelets*, of which I secured the male, were fishing. The next morning Kolintschen Island was sighted but the nearest we could get to it was seven miles off its northern point. The natives from the island, however, had observed the vessel and came driving with their dog teams over the ice.

As this was the furthest point the state of ice allowed the ship to go pro tempore I left the "Teddy Bear" here and had the natives to take my things to the island on their dog sledges. The ice was indeed very rough and as the sleds were heavily loaded besides, there was no chance for a ride, but I had to walk, run or climb the fields and hummocks the long tiresome distance along with the natives till we finally reached the village.

Fortunately I had beforehand listed in my note-book all of the more



Native Village, Kolintschen Island. July 3

common words of the Tchonick-tchee language that I got hold of, a glossary that proved to be very useful during my stay amongst these natives who did not understand a word outside their own tongue.

I pitched my 7x7 tent beside the large skin-house of Chief Konning and after a short sleep made an excursion around the island, accompanied with a couple of young natives who showed me the principal rookeries, etc. The weather was exceptionally fine and clear and for the first time on the trip I got the full bright view of the midnight-sun. * * * * * Kolintschen Island is high and rocky, with more or less steep—often perpendicular—coast, its length about $2\frac{1}{2}$ miles and $\frac{1}{2}$ mile broad. Only at the southern point a little beach line and a sandspit is formed, and here the native village of 15

Kolintschen Island. Cliff Inhabited by *Larus barrovianus* on the Top. Lower Down by *Phalacrocorax bicristatus* and *Rissa Pollicaris*



Taking Luggage to the Island on Dog Sleds

skin-houses, with altogether probably little more than a hundred inhabitants, is situated. Almost the entire northern and eastern coast of the island serves for rookeries of the seabirds. Especially are the *Kittiwakes* numerous, in some places the entire rock-walls look white with the sitting and flying birds, when seen from a little distance. My native guides made here some good exhibitions in killing birds by their stone slings. The birds that tumbled down with a broken wing only were executed in a prompt but rather brutal way by a bite in the head of the natives' strong teeth. On the northern end of the island I found a colony of the Siberian Two-tufted Cormorant (*Phalacrocorax bicristatus*) and secured a few sets of fresh eggs. In order to secure these I had to be lowered down by a rope. The sets of this species number two to three eggs only. Also the *Pallas Murre*, *Horned Puffin*, *Point Barrow* and *Vega Gull* are numerous on the island. Of other birds more or less commonly seen in the rookeries are *Tufted Puffins* and *Guillemots* (*Cephus mandtii*). All these birds had at the time to fly the seven miles over the broken pack ice in order to reach open water. A fierce snow-storm blew up on July 1, and lasted for two days. On July 3 I found a nest of *Baird Sandpiper* on the high, stony plateau on the south end of the island, the eggs about five days incubated.

A *Pectoral Sandpiper* was also seen which undoubtedly was nesting on the island but I did not succeed in taking it. Newly hatched *Point Barrow Gulls* and full-fledged young *Snowflakes* were observed July 3. Also a few *Red-throated Pippits*, *Swinhoe Wagtails*, *Wheatears*, *Longspurs* and *Redpolls* inhabited the island, as well as a pair of *Ravens* and a pair of *Peregrine Falcons*. The nest of *Peregrines* I first succeeded in locating July 7th, and secured their three eggs, the first laid egg being then about ready to be hatched. On July 10th

I got the first fresh eggs of *Murre* and *Pacific Kittiwake*, and July 14th those of *Horned Puffin*.

After a week's time spent with the collecting of the different species named above, I made preparations to leave for the mainland, but to my disappointment the ice had then begun to open up and move so much that the natives were not to be persuaded to take me the twelve miles over the ice to the nearest shore. I had therefore to wait till the strait was about free of ice, and on the 15th of July I was able to cross with a party of natives in one of their large skin-boats to the western shore of the mouth of Kolintschen Bay. The landscape consists here of flats with countless lakes and lagoons of all sizes and forms, and as the territory rather may be called swamps than tundras it proved to be a poor collecting country. The only shore-birds to be found in this wet locality were numerous *Red Phalaropes*, and in only one instance I met with a family of *American Golden Plover*.

The birds in and about the lakes also proved to be of little value—nothing but *Old Squaws*, *Red Throated Loons* and *Pacific Loons* were to be found in these fresh waters. No geese were observed during my stay here, but along the coast hundreds of *King Eiders*, *Pacific Eiders* and *Steller Ducks* were seen daily, and it remains a mystery to me where they breed, as there were no islands or rocks along the coast fit for breeding places for birds of the duck family. A number of *Long Tailed Jaegers* were seen flying in bands and evidently not breeding in the locality. The only fresh eggs I got during my stay here were those of the *Pacific Loon*. These nests were built floating between "star-grass" and made of the same material, on two feet of water in fresh water lakes. The first set of fresh eggs was taken July 18, although, I, during the first couple of days, found out that these swamps were a poor



Ice Covering the Beach After a "Squeeze," July 8, Kolintschen Bay
A Man is Seen on Top of the Ice-piles



Kolintschen Island. Dog Team Swimming a Lead of Water Between Ice and the Beach with a Load of Driftwood Fetched from the Mainland

collecting-field and therefore planned excursions to the hills about ten miles southwest of my present camp. The weather for a long time prevented any outings of that kind. For more than a week an easterly gale was blowing, accompanied with rain and a fog so thick that I was compelled to stick close to my tent most of this time. But at last, the 24th of July, to my delight the sun shone bright and warm and I left in the early morning, with provisions to last me a couple of days, on my long planned trip.

After a tiresome march through swamps and wet marshes I at last reached the hills and had just ascended the first little plateau when I sud-



Native Skin Boats at Whalen (North of East Cape)



Natives Fixing the Skeleton of a Skin Boat

denly felt a cool blast on my back. I knew then what was to come, and sure enough, upon looking round, I saw the ice-fog again coming, rolling like white smoke over the flats, and in less time than a quarter of an hour I could not see a hundred steps ahead of me. Fortunately this quarter of an hour was sufficient for me to pick out my route. Before the fog had swept over the hills I managed to mount a little hummock from where I saw a long narrow bay of the sea only about two miles to the westward. As the way to this bay was easy to find even through the thickest fog, and as I figured out that on the beach there would be driftwood enough for a good fire when I was through, I had no fear for the cold and rainy weather to come and did



Tundra. Arctic Coast. (At Kolintscheu Bay)



Walrus Herd on the Ice, August 2, 1909

not hurry, but began at once thoroughly to investigate those kinds of localities that looked good to me.

But it certainly was not to be a picnic. I had dressed light for the long walk and was therefore soon chilled right through by the wind and cold rain. But I cheered up some when observing a family of *Black-bellied Plovers*, and when I on my hunt for these birds in the very same locality stumbled over a *Spoonbill Sandpiper* for the first time in my life, and with young, too, I felt my blood circulate a good deal better at once.

But of the young ones of these two species I tried in vain to get a glimpse. I had all odds against me. The youngsters were evidently old enough to move very quickly through the grass and mosses and in that way keep themselves a safe distance from my person. Especially the young *Black-bellied Plovers*. I could hear how fast they could run by their "piping" when I kept still. But as soon as I moved toward the spot where I heard one calling it immediately became silent, and ran away with a speed like that of a rat, and I next heard it away off in a different direction. The worst hindering, however, to locate any of the species, and especially the young *Spoonbills* who gave no sound that reached my ears, was the heavy fog. Even the old *Spoonbill Sandpiper* I could only see a few yards distant when it was running between the stones and mosses on the dark ground. I tried hard to keep watching this species and had surely the youngsters at close quarters many a time, but never once did I get a glimpse of these small runners. And after a couple of hours spent in this way, mostly by lying flat on the damp ground, I was so numb and chilled right through that I had to give it up, and left for the newly discovered bay with the intention to return to the place as soon as the weather would brighten up

some. But it never did. I found the bay all right and beside a big fire on a well sheltered place and after a good warm meal I soon felt the warmth return in my body, and spent a night not so bad after all.

Next morning I was awakened by the cries of Cranes, and discovered two *Little Brown Cranes* walking around on the tundra with much gravity and precision. For quite a long while I lay motionless watching them, trying to spy out their nesting place, but only to see them fly away after their feed, so far away to the interior that I gave up all further investigations about them. As the very same foggy and rainy weather was dominating I found the best thing to do was to proceed on my eight hours march back to camp, and with the aid of my pocket compass I got there without very much trouble. The following day, after a long, weary sleep, I was awakened by the rattling of an anchor chain, and looking out I saw "Teddy Bear" lying right outside on the smooth sea. Half an hour later I was aboard with all my stuff and bound for Cape Wankarem (about 70 miles northwest of my present camp) where we arrived July 27th. I spent two days at this place where I, amongst other things, secured a few males of the *Spoonbill Sandpiper*; the young of this species was then evidently half-fledged, and I once got one of these on the wing, flying about fifty yards. But the same thick fog prevented me also this time from getting a young bird. At the nest, or rather, when with young, the *Spoonbill Sandpiper* acts exactly like the *Semi-palmated Sandpiper* and other small waders, being very bold and trying in all ways to mislead the enemy. It also understands very well the old art to act like wounded in a conspicuous way. Its song when flying is the same "thrill," familiar to other small Sandpipers. The call to the young however, is a faint "plee-plee-plee—plee-plee-plee" repeated with pauses of about five seconds.



Skinning of Walrus on the Ice, August 2, 1909

A family with full-fledged young of *Limonitis Subminuta* was also found in this locality, as well as several *Semipalmated Plovers*. A *Pacific Eider* with young ducklings was observed July 29th in the open bay here.

On July 29th we started our return journey and, visiting Kolintschen Island and most villages along the coast eastward, we arrived at Cape Serdze the 2nd of August. Quite a lot of ice was found around this cape and as plenty of walrus was observed we spent a very interesting day on a walrus hunt amongst the ice.

A few *Sabine Gulls* were secured in this vicinity, all adults. Calling at East Cape the 6th of August, the course was set south to Indian Point, where I got the opportunity to secure a young *Mongolian Plover* before we finally crossed the strait, returning to Nome August 11th.



From "1910 Notes"

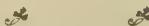
ON June 20, 1910, while passing the residence of Mr. L. R. Suydam, Floral Park, his daughter called and said that a family of Owls were eating all the young birds on their place.

I looked around and saw two Screech Owls perched on the edge of a Robin's nest; these I promptly shot, as there was enough evidence in sight to prove them guilty of the charge. After further search one more was killed and two got away.

In preparing the skins of the birds killed, I dissected the stomachs and found the remains of young Robins.

Mr. Suydam told me a few days ago that in years past there had always been an abundance of young Robins on his lawn which is spacious and supplied with numerous trees affording fine nesting sites. This year he has not observed one young Robin and is convinced that this one family of Screech Owls is responsible for it.

Henry Thurston.



SEPTEMBER 9th, 1910, on the estate of Paul D. Cravath, Locust Valley, N. Y., I saw a flock of Starlings which I estimated to be between forty and fifty thousand. It was the largest flock of birds I have ever seen.

Three days later in passing through the same section only two small flocks were observed.

George H. Downing.

Nesting of the Pine Grosbeak in Nova Scotia

By *H. F. Tufts*

NEAR Shelburne on the south-west coast of Nova Scotia, the 15th day of June, 1910, I secured a nest and three eggs of the Pine Grosbeak, under the following circumstances:

The wood-road which I was following led through a large area of wet bog or mossy swamp, rather thickly overgrown with stunted spruce and hackmatack and scattered bunches of swamp maple and laurel bushes. My attention was attracted by the rich, full-throated, warbling song of a male Pine Grosbeak on a tree top not far away. Wishing to study him more closely, I succeeded in approaching within fifty feet. Soon his singing stopped, and with a few whistled notes he flew directly into a swamp maple, whither following, I found he had joined the company of a female. The two birds were feeding upon the half-ripe maple seeds with which the tree was clustered, snapping them off and crushing with their heavy beaks, making some little noise in the operation. Feeding from branch to branch, they kept up a continuous subdued twittering and were always together—mated birds evidently. I became much interested, and though it was a far tramp home, and growing late, with mosquitoes and black-flies in tormenting throngs, decided to follow them up.

Soon the female stopped feeding, hopped to a dead limb, where she preened her feathers and rubbed her beak back and forth over the wood, resembling in this action the stropping of a razor. Then suddenly she darted quickly and straight away through the trees rather low down. The male bird, at the same time, flew to a distant tall tree in another direction.

Following the course taken by the female as nearly as I could, I searched carefully among the densely branched spruces for a nest. After nearly an hour of plunging through the bog, knee deep in water and slime, till darkness was setting in and failure seemed certain, finally I noted a dark mass some fifteen feet up a slender young spruce, close to its top. Giving the tree a slight tap with my hand the bird flew off and I was delighted to recognize the female Pine Grosbeak as she fluttered about close at hand.

The nest, a rather bulky sprawling affair of twigs and grasses, resembled somewhat in both situation and general make-up that of the Blue Jay. The three eggs were rather advanced in incubation, containing young well formed—but with the use of caustic potash the shells were properly emptied.

The Pine Grosbeak breeds very locally and sparingly in Nova Scotia—

I have frequently seen the birds during the spring and early summer in different parts of the province, but always in the wild, rough country of the interior and southern shores.

The male during the breeding season is a delightful singer. This summer I heard a Pine Grosbeak vary his song with an imitation of the rollicking notes of the Ruby-crowned Kinglet, which he performed to perfection.

August 12, 1910.



Breeding Birds of Flowerfield.

By John Lewis Childs.

ON my 700 acre farm at Flowerfield, Suffolk Co., L. I., the following birds are known to breed. It is quite a remarkable showing for one farm, all dry upland of fields and woods—no water or swamps.

Ruffed Grouse	Wood Thrush
Partridge (Quail)	Indigo Bunting
Ring Neck Pheasant	Md. Yellow Throat
Crow	Black-Th. Green Warbler
Cooper's Hawk	Starling
Meadow Lark	Goldfinch
Robin	Least Flycatcher
Bluebird	Crested Flycatcher
House Wren	Wood Pewee
Downy Woodpecker	Kingbird
Hairy Woodpecker	Phoebe
Flicker	Screech Owl
Towhee	Catbird
Ovenbird	Cowbird
English Sparrow	Green Heron
Chipping Sparrow	Baltimore Oriole
Field Sparrow	Orchard Oriole
Grasshopper Sparrow	Brown Thrasher
Song Sparrow	Chickadee
Vesper Sparrow	Black and White Warbler
Barn Swallow	Purple Grackle
Chimney Swift	Humming Bird
Vireo Red Eyed	Blue Jay
Vireo White Eyed	—47 in all.

In the Haunt of the Snowy

By Henry Thurston

IT was my privilege last winter to spend several months with Mr. R. D. Hoyt, the well-known ornithologist, at Seven Oaks, Florida, and there to study nature under his intelligent tuition. As a New York boy, whose observations had theretofore been confined to my native woods and fields, it is perhaps needless to say that I appreciated the privilege highly, and returned with my memory stored with pleasant pictures of Southern bird-life, and a better understanding of their habits than could ever be obtained from specimens under glass.

Where all was so novel and interesting it is difficult to separate from the mass the one incident which gave me most pleasure, but as I still thrill with the recollection of my first glimpse of the Snowy Heron, I have marked that day in red.

It was the fifteenth day of March, 1910. Bingo and I had planned a trip to a neighboring bayou to get some specimens of Scott's Rail for the museum. I had a good deal of faith in the success of our trip as previous experiences had taught me that Bingo was a mighty hunter as well as a near-human and most companionable dog.

Our way led through the pine woods for a half-mile or so before reaching the marsh and was made cheerful by the notes of the Florida Blue Jay and the Southern Meadowlark, the latter of which appeared to be far more approachable than his Northern cousin. Saucy little Brown-headed Nuthatches ran up and down the trees, the White-eyed Towhees called from the roadside, and the melodious songs of the Mockers and Cardinals poured from every fence-post. From the tree-tops came the delightful carol of the Pine Warblers and the roll and drumming of the Red-cockaded and Red-bellied Woodpeckers.

The impatience of Bingo, who seemed anxious to get along and do a dog's work, enabled me to resist the temptation to loiter among the pines, and in a short time we reached the marsh. Almost immediately the dog pointed and flushed a pair of Rails, and I fortunately got both. This seemed good luck enough for one day, but there was more to follow, as gratifying as it was unexpected.

While I was working through the marsh a large creek came into view, and a white heron. At first glance I supposed the bird to be a young Little Blue and was about to turn away when I discovered five more. A sharp-

er look, and my heart jumped! Could it be possible that these were Snowy Herons?

For once, Bingo was a nuisance and I wished him anywhere but there. Do what I could he seemed intent upon going in the creek. If he did, good-bye herons, and I knew that if I could not make sure of their identity I would be credited, when I told my tale, with only the usual amateur's ability to see things which are not. At last I caught the dog, and holding him with one hand and my gun in the other, I crept slowly through the grass to the edge of the creek, a short but sufficient journey, as anyone will agree who is acquainted with the power of annoyance possessed by Florida marsh grass—a round, sharp, belligerent growth, very unlike our Northern variety.

But my toil was rewarded; no room for any doubt now. These were surely Snowy Herons, and what a sight! As they strutted proudly about, the wind blowing their fluffy plumes, now and then one would raise his head and crest, and what a magnificent bird he was! I could have been content to watch them for hours, but Bingo was of a different mind. His motto is "action," and his growls and plunges to get free cut my observation short. At his first alarm the birds, cackling hoarsely, flew up the creek and disappeared around a bend.

Returning to Seven Oaks I told Mr. Hoyt of the birds I had seen—six Snowy Herons! The struggle between the politeness of a host to his guest and the preciseness of a teacher to his pupil seemed to bother him for a moment in framing a suitable response. I think the number led him to doubt my identification, but he contented himself with saying that if they were Snowys he knew where they would nest, and later we would visit them together.

The heron's breeding time is about April first, and on the second, leaving Bingo straining at his chain, Mr. Hoyt and myself set out for a rookery known to him, where Snowys formerly bred in company with the Louisiana and Little Blue Herons. As we approached their home the birds arose in the air with a sound like distant thunder, and imagine my joy when six pure white ones separated from the flock and flew across the lake. These, Mr. Hoyt said, were undoubtedly Snowy Herons, and for a moment I felt like an Arctic explorer who had produced his proof.

Fixing me out of sight in some bushes Mr. Hoyt found a hiding place for himself, and we waited for the herons to return. What a place it was—a strange sight for Northern eyes. A small pond full of buttonwood bushes, alligators and moccasins, and in the bushes hundreds of nests of the Little Blue and Louisiana Herons. Among them somewhere, too, three nests of the rapidly disappearing Snowy—just where, we were waiting to learn. After an interval of time, which probably seemed longer than it really was, the herons began to return. Sounding their unmusical cacks and pushing

each other from limb to limb, they finally settled down upon their nests as though nothing had happened to disturb them. But no Snowys yet.

Soon from one side I heard a rush of wings and saw a Snowy Heron settle on a bush. How out of place it seemed among those other birds, which before I had seen Snowys, I thought could not be more beautiful. The other five seemed more wary and circled longer overhead, but at last they, too, alighted about one hundred feet from me, one on the edge of a nest. After preening her feathers and inspecting the surroundings, this one settled down to brood her eggs,—so I had succeeded in locating one nest.

While on the nest the bird displayed a habit that both interested and surprised me. At varying intervals she would raise her plumes and crest until they appeared nearly triple their usual size, fluffing the back plumes until they were almost level with those of her head. Had I seen a heron mounted in that manner I fear I would have called it unnatural, but my ignorance is not sufficiently great to criticise the living bird. She can do things with impunity that a taxidermist would not dare attempt.

It was myself this time, and not poor, forsaken Bingo, that cut our observation short. My position was cramped and I moved my feet, noiselessly I thought. The herons heard me, though, and were in the air like a flash. My only compensation for my carelessness was the resulting knowledge that when disturbed, unlike other herons, the Snowy utters no cry until a safe distance away from the disturber.

As further concealment was needless, we now proceeded to the nest and found four eggs in it. The nest was very similar to the hundreds of others surrounding it, but there is enough difference in the eggs to enable an expert to distinguish them from those of the Louisiana and Little Blue. To the amateur eye, though, they are so much alike that I consider myself fortunate in having seen one set exhibited in the native nest, with no chance for the substitution of something "just as good."

What a sight a colony of the Snowy Heron alone would be. Picture a flock of hundreds where we found a bare half-dozen. I fear that is something my eyes will never behold, as these birds seem slowly but surely disappearing. The ones we saw are the only ones that have been found breeding near Seven Oaks for several seasons, but as they are in a place known only to Mr. Hoyt and myself they may be able to help replenish the thinning numbers of their kind.

Let us hope that the plume hunter, in his search for finery for My Lady's hat, may have his footsteps directed always away from this haunt of the Snowy. And let me add a prayer that My Lady herself will pay less heed to "Votes for women" and more attention to those who plead with her to cease causing the slaughter of beautiful, innocent birds as sacrifices upon the altar of fashion.

The Ornithological Collection in the Childs Museum of North American Natural History

FOR the purpose of reference, we publish a complete list of the mounted Birds, Eggs, and Nests in the John Lewis Childs Collection, abbreviated as much as possible.

We have ommitted scientific names but give the official A. O. U. number and common name of each species.

Pair indicates a pair of mounted birds.

M " " male mounted specimen.

F " " female " "

y " " young " "

G " " group of mounted specimens. (Adults, young, or birds in different phases of plumage.)

4 or any other figure indicates a set of eggs of that number.

n-4 or any other figure indicates a nest with set of eggs of that number.

S-5 or any other figure indicates a stub nesting site with set of eggs.

n-5 & Pair indicates a nest in situ with set of eggs and a pair of mounted birds.

1.	GREBE, Western	Pair—4, 4, 5, 5	13.	PUFFIN	M—1, 1
2.	Hobboell's	Pair—5, 8	13a.	Large-billed	G of 3—1, 1
3.	Horned	Pair—5, 8	14.	Horned	M, y—1, 1
4.	Eared	Pair—8, n-7	15.	AUKLET, Rhinoceros	F—1
5.	Mexican	G of 3—5, 5	16.	Cassin's	G of 7—5 of 1
6.	Pied-billed	G of 7—6, 7, 9, n.5	17.	Paroquet	M
7.	LOON	G of 4—4 of 2	18.	Crested	M—1
8.	Yellow-billed	M—2	19.	Whiskered	Pair
9.	Black-throated	Pair—2	20.	Least	F—1, 1
10.	Pacific	G of 3—1, 2	21.	MURRELET, Ancient	M—2, 2
11.	Red-throated	G of 3—2	23.	Marbled	Pair—1
12.	PUFFIN, Tufted	M—1	24.	Kittlitz's	M—1

25.	MURRELET, Xantus's		50.	GULL, Siberian	
26.	Craveri's	1, 2	51.	Herring	M-3
27.	GUILLEMOT, Black	M-2	52.	Vega	M-2, 3, 3, 3
28.	Mandt's	M-2	53.	California	M-3
29.	Pigeon	M-2	54.	Ring-billed	M-5
30.	MURRE	F-6 of 1	55.	Short-billed	M-3, 3, n-3
30a.	California	F-10 of 1	56.	Mew	M-3
31.	Brunnich's	M-1, 1	57.	Heermann's	M-3, 3
31a.	Pallas's	M-17 of 1	58.	Laughing	M-3, 3, n-3
32.	AUK, Razor-billed	M-4 of 1	59.	Franklin's	M-4, 3
33.	Great	--2 (Casts)	60.	Bonaparte's	M-3, 4
34.	DOVEKIE	G of 4, 1	60. 1	Little	M-2
35.	SKUA	M-2	61.	Ross's	M-3
36.	JAEGER, Pomarine	G of 3, 2	62.	Sabine's	Pair
37.	Parasitic	M-2, 2	63.	TERN, Gull-billed	F-2
38.	Long-tailed	F-2, 2	64.	Caspian	M-3, 3
39.	GULL, Ivory	G of 4	65.	Royal	M-4 of 2, 3, 3, 3
40.	KITTIWAKE	M-3, 3	66.	Elegant	Pair-5 of 2, 4
40a.	Pacific	Pair-2, 3	67.	Cabot's	1
41.	Red-legged	M-3	68.	Trudeau's	M-3, 3, 3
42.	GULL, Glaucous	Pair-3, 3, 3	69.	Forster's	Pair
43.	Iceland	Pair-3, 3	70.	Common	M-3, 3
44.	Glaucous-winged	M-3	71.	Arctic	M-11 of 3
45.	Kumlien's	Pair-1	72.	Roseate	Pair-2, 4
46.	Nelson's	F	73.	Aleutian	M-3, 3
47.	Great Black-backed	M-3, 3	74.	Least	3
48.	Slaty-backed	M-3	75.	M-8 of 2, 3, 3, 4, n-2	
49.	Western	M-3, 3	76.	Sooty	
					7 of 1
					M-1, 1

77.	TERN, Black	99.	PETREL, Scaled
	Pair—12 of 3, 4, n-3		Pair—1
78.	" White-winged	100.	Fisher's
	Pair—3, 3		
79.	NODDY	101.	Bulwer's
	m—8 of 1		M—1
80.	BLACK SKIMMER	102.	Pintado
	Pair—1, 4, 4, 4		Pair
81.	ALBATROSS, Black-footed	103.	Least
	M—1		M—1
82.	Short-tailed	104.	Storm
	M—1		M—1, 1
82.1	Layson's	105.	Forked-tailed
	I		M—1
83.	Yellow-nosed	105.2	Kaeding's
	M—1		M—5 of 1
84.	Sooty	106.	Leache's
	I		M—1, 1
85.	FULMAR, Giant	106.1	Guadalupe
	M—1		M—1
86.	FULMAR	106.2	Hawaiian
	Pair—1, 1, 1		M—1
86b.	Pacific	107.	Black
	Pair—1		M—1
86.1	Rodger's	108.	Ashy
	I		M—1, 1
87.	Slender-billed	108.1	Socorro
			M—1
88.	SHEARWATER, Cory's	109.	Wilson's
	M		M—1
89.	Greater	110.	White-bellied
	F—6 of 1		
90.	Manx	111.	White-faced
	M—1		Pair—1
91.	Pink-footed	112.	TROPIC BIRD, Yellow-bellied
	M		M—1, 1
92.	Audubon's	113.	Red-billed
	M—1, 1		M—1, 2
92.1	Allied	113.1	Red-tailed
	M—1, 1		Pair—1
93.	Black-vented	114.	BOOBY, Blue-faced
	M—1		M—1
93.1	Townsend's	114.1	Blue-footed
	M		3
95.	Sooty	115.	BOOBY
	M—1		Pair—2
96.	Slender-billed	115.1	Brewster's
	M—1		F—1, 2, 2
96.1	Wedge-tailed	116.	Red-footed
	I		M—1, 1
96.2	New Zealand	117.	GANNET
			M—1, 1
97.	Black-tailed	118.	WATER TURKEY
			Group of 4—4, 4, 6, n-3
98.	PETREL, Black-capped	119.	CORMORANT
	M		M—4

120.	CORMORANT, Double-crested	M—7	141.	DUCK, Teal, Cinnamon
120.a	Florida	Pair—4	141.1	Pair—9, n—8, n—9
120.b	White-crested	M—8	142.	Sheldrake, Ruddy
120.c	Farallon	M—4	143.	M—7
121.	Mexican	F—4, 4, 3 of 5	144.	Shoveller
122.	Brandt's	Pair—4, n—5	145.	G of 3, 9, 11, n—9
123.	Pelagic	M—3	146.	Pintail
123.a	Violet-green	M—4	147.	Pair—9, 11, n—10, n—11
123.b	Baird's	M—4	148.	Wood
124.	Red-faced	Pair—3, 4	149.	M—G of 10—13, s—8
125.	PELICAN, White	Pair—2, 3, 3	150.	Rufous-crested
126.	Brown	G of 4—6 of 3, 4, 4, 4, n—3	151.	M—6, n—7
127.	Brown, California	M—3, 3, 3	152.	Redhead
128.	MAN-O'-WAR BIRD	G of 4—3 of 1	153.	Pair—16, 18, n—9
129.	MERGANSER	Pair—9, 9, n—12	154.	Canvas-back
130.	Red-breasted	Pair—9, n—9	155.	G of 3—8, n—7, n—11
131.	Hooded	G of 4—11, 12, s—8	156.	Scaup
131.1	Smew	Pair—6	157.	M—10, n—9
132.	DUCK, Mallard	Pair—14, 16, 2n—11, n—15	158.	Lesser Scaup
133.	Black	Pair—8, 11, n—12	159.	Pair—9, 11, n—11
134.	Florida	Pair—8, n—10	160.	Ring-necked
134.a	Mottled	Pair—9	161.	M—10, n—10
135.	Gadwall	Pair—9, n—9	162.	Golden-eye
136.	European Widgeon	M—8, 10, n—7	163.	Pair—12, n—13, n—16
137.	Baldpate	Pair—10, n—10	164.	“ , Barrow's
138.	Teal, European	Pair—8, 10	165.	Pair—9, 10, n—14
139.	“ Green-winged	Pair—8, n—12	166.	Buffle-head
140.	“ Blue-winged	Pair—9, 11, n—9	167.	G of 3—10
				Old-squaw
				Harlequin
				Pair—6, 12
				Labrador
				Eider, Steller's
				G of 3—8
				“ Spectacled
				Pair—7
				“ Northern
				Pair—7, n—6
				“ American
				M—4, 5, n—6
				“ Pacific
				M—5, 2n—8
				“ King
				Pair—4
				Scoter
				M—10, n—7
				“ Velvet
				M—7
				“ “ White-winged
				M—8, n—9
				“ Surf
				Pair—n—8
				Ruddy
				M—6, 9, n—6, n—8

168.	DUCK, Masked	188.	IBIS, Wood
169.	GOOSE, Snow	189.	JABIRU
169.a	" Greater	190.	BITTERN
	Pair—5, n-6		Pair—6
169.1	Blue	191.	Least
			G of 3—2, 3, 3, 4 of 4, 4 of 5, n-3
170.	Ross's	191.1	" , Cory's
	M		3
171.	European White-fronted	192.	HERON, Great White
	M—5		Pair—4, 4
171.a.	White-fronted	194.	Great Blue
	Pair—n-6		Pair—3, 4, 4, 5, 6
171.1	Bean	194a.	Northwestern Coast
	M—5, n-6		4
171.2	Pink-footed	194b.	Ward's
	5, 6		Pair—2, 4, n-4
172.	Canada	195.	European
	M—5, 7, 8, n-7		M—4
172a.	Hutchins's	196.	EGRET
	M		Pair—4, 4, n-4
172b.	White-cheeked	197.	Snowy
	F		Pair—4, 4, 5, n-4
172c.	Cackling	197a.	Brewster's
	Pair		
173a.	Brant	198.	Reddish
	M—5		Pair—4
174.	" , Black	199.	HERON, Louisiana
	M—8		Pair—2, 2, 4 of 3, 4, 4, n-4
175.	Barnacle	200.	Little Blue
			G of 4—3, 3 of 4, 4 of 5, n-4
176.	Emperor	201.	Green
	M—6		Pair—3, 3, 4 of 4, 5, 5, 5, 6
177.	TREE DUCK, Black-bellied	201a.	" , Frazar's
	Pair—10		1, 3
178.	Fulvous	201c.	" , Anthony's
	Pair—19, n-30		M—4
179.	SWAN, Whooper	202.	Night, Black-crowned
	M—7		M—2, 2, 3, 3, 4, 5, n-4
180.	Whistling	203.	" , Yellow-crowned
	M—5		Pair—5
181.	Trumpeter	204.	CRANE, Whooping
	M—4		Pair—3 of 2
182.	FLAMINGO	205.	Little Brown
	F, y—1, 1		Pair—3 of 2
183.	SPOONBILL, Roseate	206.	San thill
	G of 3—3, 3, 3 of 4, n-5		M—4 of 2, n-2
184.	IBIS, White	207.	LIMPKIN
	G of 5—10 of 3, 4, n-4		Pair—5, 7, n-5
185.	Scarlet	208.	RAIL, King
	Pair—3, 3		Pair—12, 13, 14
186.	Glossy	209.	Belding's
	Pair—5		
187.	" , White-faced	210.	California Clapper
	Pair—5		Pair—11

210.1.	RAIL, Light-footed		
211.	Clapper		
	M—6, 10, 15, n-12		
211a.	" , Louisiana	M—12	M
211b.	" , Florida	Pair—n-4	
211c.	" , Wayne's	Pair—12, n-12	
211.2.	" , Caribbean	6	
212.	Virginia	Pair—10, 11, n-10	
213.	Spotted Crake	M—4, 6	
214.	Sora	M—8, 8, 13, n-11, n-16	
215.	Yellow	Pair—n-9, n-10	
216.	Black	Pair—n-8	
216.1	Farallon	Pair—7	
217.	Corn Crake	M—4, 10	
218.	GALLINULE, Purple	G of 3—8	
219.	Florida	Pair—5, 8, 9	
220.	COOT, European	Pair—9	
221.	American	M, y—9, 11	
222.	PHALAROPE, Red	G of 3—3 of 4	
223.	Northern	Pair—4 of 4, n-4	
224.	Wilson's	Pair—4, n-4	
225.	AVOCET	Pair—2, 4	
226.	STILT, Black-necked	Pair—3, 3, 3, 4, 4, n-4	
227.	WOODCOCK, European	M—4, 4	
228.	American	G of 3, G of 6—3, 4, 2n-4	
229.	SNIPE, European	M—4	
230.	Wilson's	Pair—5 of 4, n-4	
230.1.	Greater	Pair—4	
231.	DOWITCHER	Pair—4	
232.	DOWITCHER, Long-billed		
		Pair—4	
233.	SANDPIPER, Stilt		M
234.	Knot		
235.	Purple		M—4, 4, 5
235a.	Aleutian		M—4
235b.	Pribolof		
238.	Sharp-tailed		M
239.	Pectoral		M—4
240.	White-rumped		M
241.	Baird's		
242.	Least		M—4, 4
242.1.	Long-toed Stint		4
243.	Dunlin		M—4, 4
243a.	Red-backed		G of 3—3, 4
244.	Curlew		M—4
245.	Spoonbill		M
246.	Semipalmated		
		Pair—3, 4	
247.	Western		M—4
248.	Sanderling		Pair—3
249.	GODWIT, Marbled		Pair—3
250.	Pacific		4
251.	Hudsonian		M—4
252.	Black-tailed		Pair—4
253.	Green-shanks		M—4
254.	YELLOW-LEGS, Greater		Pair—4
255.	Lesser		Pair—4
256—	SANDPIPER, Solitary		
		Pair—7 of 4, n-4	
256a.	" , Western		M

The Warbler

257.	SANDPIPER, Green	M—4	281.	PLOVER, Mountain	Pair—3, 4
257.1.	Wood	G of 3, 4, 4	282.	SURF BIRD	M
258.	WILLET	Pair—3, 3, 5 of 4, 5	283.	TURNSTONE	Pair—4
258a.	Western	M—3, 4, 4	283.a.	Ruddy	Pair—4
259.	WANDERING TATTLER	Pair	284.	Black	Pair—3
260.	RUFF	G of 3, 4, 4	285.	OYSTER-CATCHER, European	M—4
261.	UPLAND PLOVER	Pair—5 of 4	286.	American	M, y—2, 2, 2, 3, 3, 3
262.	SANDPIPER, Buff-breasted	M—4	286.1.	Frazar's	M—1
263.	Spotted	G of 8—3, 8 of 4, 5, n-3	287.	Black	M—3, n-3
264.	CURLEW, Long-billed	Pair—4, 4, n-4	288.	MEXICAN JACANA	G of 3—5, 5
265.	Hudsonian	Pair—4	289.	BOB WHITE	Pair—21
266.	Eskimo	Pair—	289a.	Florida	Pair—G of 9—12, 17
267.	WHIMBREL	M—4, 4	289b.	Texas	Pair—16
268.	CURLEW, Bristle-thigh	M	291.	Masked	
269.	LAPWING	M—3	292.	QUAIL, Mountain	Pair—11, 13, n-9
269.1.	DOTTEREL	M—4, 4	292a.	Plumed	Pair—22, n-11
270.	PLOVER, Black-bellied	Pair—3, 4	292b.	San Pedro	M—9
271.	Golden, European	M—4, 4, 4	293.	Scaled	Pair—14
272.	" American	M—3, 4	293a.	" , Chestnut-bellied	Pair—22
272.a.	" Pacific	Pair—4	294.	California	
273.	Killdeer	G of 6—5 of 4	294a.	Valley	Pair—13, 14, 17, 19, 24, n-13
274.	Semipalmated	Pair—4	295.	Gambel's	Pair—12, 14, 14
275.	Ringed	M—4	296.	Mearn's	Pair—13, 14, 16, 16
276.	" Little	Pair—4, 4, 4	297.	GROUSE, Dusky	Pair—15, 13, 15
277.	Piping	M—4, 4	297a.	Sooty	M—12
278.	Snowy	Pair—3, 3, 3, n-3	297b.	Richardson's	M—4, 5, 8, 8, 9, 9
279.	Mongolian	Pair—3	297c.	Sierra	Pair—5, 9
280.	Wilson's	G of 3—2, 2, 3, 4, 4, 4	298.	PARTRIDGE, Spruce, Hudsonian	M

298b.	PARTRIDGE, Spruce, Alaska	309.	SAGE HEN
	Pair		Pair—9, 15
298c.	" , Canada	310.	WILD TURKEY, Merriam's
	Pair—6, 10, 15		13
199.	GROUSE, Franklin	310a.	Wild Turkey
	Pair—7	310b.	Florida
300.	Ruffed	310c.	Rio Grande
	N & G of 5,—12, 13, 19, n—15	311.	CHACHALACA
300a.	" , Canada	312.	PIGEON, Band-tailed
	M—8, 10, 10, 11	312a.	Viosca's
300b.	" , Gray	313.	Red-billed
	M—9	314.	White-crowned
300c.	" , Oregon	314.1.	Scaled
	Pair—9	315.	Passenger
301.	PTARMIGAN, Willow	316.	DOVE, Mourning
	G of 3—13	317.	Zenaida
301a.	Allen's	318.	White-fronted
	M—10	319.	White-winged
301b.	Alexander's	320.	Ground
		320a.	Pair—2, 2, 2, 2, n—2
302.	Rock	320b.	" , Mexican
	M—6		Pair—6 of 2, n—2
302a.	Reinhardt's	321.	" , Bermuda
	M—11, 10	322.	Inca
302b.	Nelson's	322.	Quail, Key West
		322.1.	Pair—2, n—2
302c.	Turner's	323.	" , Ruddy
		323.	Pair—2, n—2
302d.	Townsend's	324.	Blue-headed
	M	324.	VULTURE, California
302e.	Adak	325.	Turkey
		325.	Pair—2
302f.	Dixon's	326.	Black
		326.	G of 4—4 of 2
302.1	Everman's	327.	KITE, Swallow-tailed
			G of 3, 9 of 2, 3
303.	Welch's	328.	White-tailed
			M—4, 5
304.	White-tailed	M—10	
		G of 3	
304a.	" , Kenai	Pair—7	
305.	CHICKEN, Prairie	Pair—14	
305a.	Attwater's	Pair—10	
306.	HEATH HEN	Pair—1	
307.	CHICKEN, Prairie, Lesser	Pair—9, 10	
308.	GROUSE, Sharp-tailed	M—13	
308a.	Sharp-tailed, Columbian	Sharp-tailed, Columbian	
		Pair—11	
308b.	" , Prairie	" , Prairie	
		Pair—11, 16	

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329.	KITE, Mississippi	M—6 of 2, n-3	352a.	EAGLE, Bald, Northern	M—2
330.	Everglade	M—3, 5, n-4	353.	GYRFALCAN, White	Pair—3, 4
331.	HAWK, Marsh	Pair—4, 6 of 5, 7, 7, n-6	354.	Gray	Pair—3
332.	Sharp-shinned	M—3, 3, 3, 4, 4, 4, 6, n-7	354a.	Gyrfalcon	M—4
333.	Cooper's	Pair—4, 5, 5, 6, n-5	354b.	Black	4
334.	Goshawk	G of 3—3	355.	FALCON, Prairie	M—4, 4, 5
334a.	" Western	M—3	356.	Peregrine	4
335.	Harris	M—3, 3, 3, 4	356a.	HAWK, Duck	M—3, 4, 4, 4, n-4
337.	Red-tailed	G of 3, 2, 2, 3, 4, n-3	356b.	Peale's	3, 4
337a.	Krider's	M—6 of 2, 3 of 3	357.	Pigeon	Pair—4, 5
337b.	Western Red-tailed	M—2, 2, 3, 4	357a.	Black	5
337d.	Harlan's	F—2, 2, 3, 3, 3	357b.	Richardson's	Pair—5, n-4
337e.	Alaska Red-tailed		358. I.	MERLIN	M—5, 5
339.	Red-shouldered		359.	APLOMADO FALCON	M—4
339a.	Pair—2, 4 of 3, 4, 4, 4, 5, 5, n-4	" Florida	359. I.	KESTREL	M-6
339b.	Red-bellied	Pair—3, 3	360.	HAWK, Sparrow	Pair—3, 4, 4, 4, 5
340.	Zone-tailed	M—3, 3, 4	360a.	Desert	M—4 of 5, 7
341.		Pair—2, 3	360b.	San Lucas	M—4
342.	Sennett's White-tailed	M—2, 3	360c.	Little	M—3
343.	Swainson's	M—2, 2, 3, 3, 3, 4	361.	Cuban	Pair—2, 2, 2, 3
344.	Broadwinged	Pair—3, 3, 3, 4, n-3	362.	CARACARA, Audubon's	Pair—2, 2, 2, 3
345.	Short-tailed	Pair—3, 3, 4, 4	363.	Guadalupe	1, 2
346.	Black, Mexican	M—2	364.	OSPREY	M—5 of 4
347a.	Goshawk, Mexican	M—2, 3	365.	OWL, Barn	Pair—7, 10
348.	Rough-legged	Pair—4	366.	Long-eared	M—6
	" Ferruginous		367.	Short-eared	Pair—7, 7, 8
349.	M—6 of 3, 5 of 4, 6 of 5, 6		368.	Barred	M—4, 5
	EAGLE, Golden	Pair—2, 2, 3, 3	368a.	" Florida	Pair—2
351.	Gray Sea	M—3			
352.	Bald	G of 4 & n, 2, 3, 3			

368b.	OWL, Barred, Texas		375g.	OWL, Grt. Horned, Saint Michael
369.	Spotted	Pair—2	376.	Snowy
369a.	" , Northern	F—4	377.	Hawk
370.	Great Grey	Pair—2	377a.	" , American
370a.	Lapp	M—5	378.	Burrowing
371.	Richardson's	Pair—5	378a.	" , Florida
372.	Saw-whet	Pair—4, 5, 8-7	379.	Pygmy
372a.	" , Northwestern	F	379a.	" , California
373.	Screech	Pair—3, 4	379. I.	" , Hoskins
373a.	" , Florida	2, 2, 3, 3, 3	380.	" , Ferruginous
373b.	" , Texas	M—3, 3, 6	381.	Elf
373c.	" , California	M—6	382.	CAROLINA PAROQUET
373d.	" , Kennicott's	M—3, 5	382. I.	THICK-BILLED PARROT
373e.	" , Rocky Mountain	M—4	383.	ANI
373f.	" , Mexican	M—4	384.	Groove-billed
373g.	" , Aiken's	3	385.	ROAD-RUNNER
373h.	" , Mac Farlane's	M—3	386.	CUCKOO, Mangrove
373. I.	" , Spotted	M—4	386a.	Maynard's
373. 2.	" , Xantus's		387.	Yellow-billed
374.	" , Flammulated	Pair—3	387a.	Pair—2, 2, 2, 3, 3, 4, 4, 5, 5
374a.	" , Dwarf		388.	Black-billed
375.	Great-horned	Pair—3, 4, 5	388. I.	Pair—1, 3, 3, 3, 4, 4, 5, 5, 5, 5
375a.	" , Western	M—2, 3	389.	KAMCHATKA
375b.	" , Arctic	Pair—2	390.	TROGON, Coppery-tailed
375c.	" , Dusky	Pair—2	390. I.	KINGFISHER, Belted
375d.	" , Pacific	M—5	391.	Ringed
375e.	" , Dwarf		391. I.	Texas
375f.	" , Labrador		392.	WOODPECKER, Ivory-billed
				Pair, G of 3—2, S—2
			393.	Hairy
				M—5, S—5

393a.	WOODPECKER, Hairy, Northern	405.	WOODPECKER, Pileated
	Pair—5, 7, S-3		Pair—3, 5, 6, S-3
393b.	Southern Hairy	405a.	Northern
	Pair—2, 4		Pair—6, S-5
393c.	Harris	406.	Red headed
	M—4		Pair—5, 5, 6
393d.	Cabanis's	407.	Ant-eating
	Pair—4		Pair—4, S-4
393e.	Rocky Mountain Hairy	407a.	California
	Pair		M—6, 10
393f.	Queen Charlotte	407b.	Narrow-fronted
			M
393g.	Newfoundland	408.	Lewis's
			M—5, 6
394.	Southern Downy	409.	Red-bellied
	Pair—6		M—4, 5, 6
394a.	Gardener	410.	Golden-fronted
	M—5, 6, S-3		M—4, 4, 5, 5, 5
394b.	Batchelder's	411.	Gila
	4		Pair—4, 4, S-4
394c.	Downy	412.	FLICKER
	M—4, 4, 5, 5, 5, 6, 6, S-4—5		Pair—6
394d.	“ , Nelson's	412a.	Northern
			M—4, 6, 6, 9, 9, 11, 12, S-10
394e.	Willow	413.	Red-shafted
	Pair		Pair—6, 7, 7, 7, 8
395.	Red-cockaded	413a.	Northwestern
	M—5, S-5		M—5, 8
396.	Texas	414.	Gilded
	M—4, 5, S-4		Pair—4, S-4
396a.	San Lucas	415.	Guadalupe
	Pair		
397.	Nuttall's	416.	CHUCK-WILL'S-WIDOW
	M—5		G of 4, 10 of 2
398.	Arizona	417.	WHIP-POOR-WILL
	M—4, S-4		Pair—9 of 2, n-2
399.	White-headed	417a.	Stephen's
	M—3 of 4, S-5		Pair—2
400.	Arctic Three-toed	418.	POORWILL
	M—4		M—2
401.	Three-toed	418a.	Frosted
	M—5		Pair—2
401a.	“ , Alaska	418b.	Dusky
	M—5		M—2
401b.	“ , Alpine	419.	PARAQUE, Merrill's
	M—4		Pair—9 of 2
402.	SAPSUCKER, Yellow-breasted	420.	NIGHT-HAWK
	Pair—4, 4, 5, 6		Pair—1, 10 of 2
402a.	Red-naped	420a.	Western
	M—4, S-5		Pair—5 of 2
403.	Red-breasted	420b.	Florida
	M—4		Pair—2, 2
403a.	“ , Northern	420c.	Sennett's
	Pair—5		F—2, 2
404.	Williamson's	420d.	Pacific
	M—6		

421.	NIGHT-HAWK, Texas		446.	KINGBIRD, Couch's
		Pair—10 of 2		M—4 of 3, 5, n-4
422.	SWIFT, Black	Pair	447.	Arkansas
				Pair—4, 5, n-4
423.	Chimney		448.	Cassain's
		M—4, 4, 4, 5, n-8		Pair—4, 5, n-4
424.	Vaux's	M—4, n-6	449.	FLYCATCHER, Derby
				M—4 of 4, 5, n-4
425.	White-throated	M—4	451.	Sulphur-bellied
				Pair—4, n-3
426.	HUMMINGBIRD, Rivoli's	Pair—n-2	452.	Crested
				Pair—3, 5, 6, 6, 6, 7, S-4
427.	Blue-throated	M—n-2	453.	" , Arizona
				M—5, S-3, 5
428.	Ruby-throated	Pair & n-2, n-2	453a.	" , Mexican
				M—4, 5, 5, n-8
429.	Black-chinned	M—2, 2, n-2	454.	Ash-throated
				Pair—3, 4, 4, 5, n-7, S-4
430.	Costa's	Pair & n-2, n-2	454b.	Lower California
				Pair
431.	Anna's	Pair & n-2—5 of 2, n-2	455.	Lawrence
				M—4
432.	Broad-tailed	M—2, n-2	455a.	Olivaceous
				Pair—3, 3, 4, S-3
433.	Rufous	Pair & n-2, n-2	456.	PHOEBE
				Pair—5, 6, n-5—6
434.	Allen's	Pair & n-2, 2, 2, n-2	457.	Say's
				M—4, 5, n-4
435.	Morcon's		458.	Black
				M—3 of 4, n-4
436.	Calliope	M—3 n-2	459.	FLYCATCHER, Olivesided
				M & N—M—2, 4 of 3, 4, 4, n-4
437.	Lucifer	M—n-2	460.	Coues's
				Pair—3, 4, n-3
438.	Rieffer's	M—n-2	461.	WOOD PEWEE
				Pair—5 of 3, 4, 2 n-4
439.	Buff-bellied	M—4 n-2	462.	Western
				M—3, n-3
439. I.	Salvin's		462a.	Large-billed
				Pair
440.	XANTUS'S BECARD	M	463.	FLYCATCHER, Yellow-bellied
				M—4, n-4
440. I.	White-eared	Pair	464.	Western
				M—4, 4, n-4
441.	Broad-billed	Pair—2, n-2	464a.	San Lucas
				M
441. I.			465.	Acadian
				Pair—2, 3, 3, 3, n-2—3
442.	FLYCATCHER, Forked-tailed	Pair—4	466.	Traill's
				M—4, 4, n-3
443.	Scissor-tailed	M—3, 4, 5, n-5	466a.	Alder
				Pair & N—Pair—5 of 3, 4, 4, 2 n-3
444.	KINGBIRD	Pair—3, 4 of 4, 5, n-4	467.	Least
				Pair—3, 4, 4, 4, n-4, Pair & N-4
445.	Gray	Pair—5 of 3, 2 of 4, n-4	468.	Hammond's
				Pair—3 of 4, n-4

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469.	FLYCATCHER, Wright's	M—3, n-4	478d.	JAY, Queen Charlotte	Pair
469.1.	Gray	G of 4, n-4	478e.	Coast	
470a.	Buff-breasted	Pair—4, n-3	479.	Florida	Pair—3, 4
471.	Vermilion	Pair—4 of 3, n-3	480.	Woodhouse's	Pair—4, 6, n-6
472.	Beardless	F	480.1.	Blue-eared	4
473.	SKYLARK	M—4, 6, n-4	480.2.	Texas	Pair
474.	HORNED LARK	M—4, 4, 2 n-4	481.	California	
474a.	Pallid	M—3, n-4	481a.	Pair—5 of 4, 5, 5, 6, n-6	
474b.	Prairie	Pair—3, 4, +	481b.	Xantus's	Pair
474c.	Desert	Pair—4, 4	481.1.	Belding's	Pair—4
474d.	Texas	M—4	482.	Santa Cruz	Pair—3, n-3
474e.	California	Pair—2, 4	482a.	Arizona	Pair—5, 9, n-5
474f.	Ruddy	M—3, 3, 4, 4	483.	Couch's	Pair
474g.	Streaked	M—4, n-3	484.	Green	Pair—5 of 4, n-4
474h.	Scorched	M—4, n-4	484a.	Canada	Pair—3, n-4
474i.	Dusky	M—4	484b.	Rocky Mountain	Pair—n-2
474j.	Sonora	M	484c.	Alaska	M—n-4
474k.	Hoyt's	4	485.	Labrador	Pair—n-2
474l.	Montezuma		485a.	Oregon	Pair
474m.	Island	Pair—3, 4, n-4	485a.	Gray	Pair
475.	MAGPIE	M—4 of 6, 7, 8, 9, n-6	486.	RAVEN	Pair—5
476.	Yellow-billed	M—6, 7	486a.	Northern	M—7, n-7
477.	JAY, Blue	M—3, 4, 7 of 5, 6, n-5	487.	White-necked	M—4, 5, 7, 7
477a.	" Florida	Pair—3 of 3, 4, 5, n-4	488.	CROW	M—3, 3, 3, 4 of 4, 5, 5, 6, 6, 7, n-6
478.	Stellar's	Pair—4, +	488a.	Florida	Pair—4, 5, n-5
478a.	Blue-fronted	Pair—2, 5, n-5	488b.	Western	
478b.	Long-crested	Pair—5, 3, n-4	489.	Northwestern	M—5, 7
478c.	Black-headed	Pair—n-5	490.	Fish	M—6, n-5

490.2.	CROW, Hooded		506.	ORIOLE, Orchard
491.	CLARKE'S NUTCRACKER	5	507.	Pair—3, 4, 5, 5, 6, 6, n-5-6 Baltimore
	N—1 & Pair—4		508.	Pair—3, 4, 5, 5, 6, 6, n-5-6 Bullock's
492.	PINON JAY	Pair—3, 4, n-5-3		Pair—5, 5, 6, n-4
493.	STARLING	Pair—5, 6, 6, 8, S-4, n-7	509.	BLACKBIRD, Rusty
494.	BOBOLINK	G of 3, 4, 5, 6, 6, 7, 7, n-6		G of 3, 5, 5, 5, n-5
495.	COWBIRD	M—4 of 1	510.	Brewer's
495a.	Dwarf	M—1		M—3, 3, 3, 4, 6 of 5, 6, 7, n-5
496.	Red-eye	M—2 of 1	511.	GRACKLE, Purple
496a.	Bronze			Pair—4, 4, 5, 5, n-5
497.	BLACKBIRD, Yellow-headed		511a.	Florida
	M—4, 4, 6, n-4			Pair—2, 4, 4, 5, n-5
498.	Red-winged		511b.	Bronzed
	G of 5, 3, 3, 3, 16 of 4, 5, 5, 6, n-5			M—4, 4, 4, 5, 5, n-5
498a.	" , Sonora	M—5, 2n-4	513.	Boat-tailed
498b.	" , Bahama	M—3, 3, 4, 4		Pair—2, 2, 13 of 3, 5, 5, n-4
498c.	" , Florida	Pair—3, 3	513a.	Great-tailed
498d.	" , Thick-billed	Pair—4, n-4		Pair—3, 10 of 4, 5, 5, n-4
49 e.	" , San Diego		514.	GROSBEAK, Evening
	4, 4, 4, n-4			Pair—4
498f.	" , Northwestern	Pair—5, n-4	514a.	" , Western
	Pair—5, n-4			Pair—4, n-3
498g.	" , Vera Cruz	4, 4, n-4	515.	Pine
				G of 3—4, n-3-4
499.	Bicolored	M—3, 3 of 4, n-4	515a.	" , Rocky Mountain
500.	Tricolored	M—4, 4, n-4		G of 3—4
501.	MEADOWLARK	Pair—5, 5, 5, 6, n-5	515b.	" , California
501a.	Rio Grande	M—5, 5, 5	515c.	" , Alaska
501c.	Southern	Pair—4, 6	515d.	" , Kadiak
501.1.	Western	M—3 of 4, 5, 6, n-6	516.	CASSIN'S BULLFINCH
503.	ORIOLE, Audubon's	Pair—5	517.	PURPLE FINCH
504.	Scott's	Pair—5, n-3	517a.	California
505.	Sennett's	Pair—5, n-3		G of 4—4, 5
505a.	Arizona Hooded	Pair—4, 5, 5, n-4	518.	Cassin's
	Pair—3, 3, 4, n-4			Pair—4, 5, 5, n-4
			519.	HOUSE FINCH
				Pair—4, 4, 5, 5, n-6
			519b.	San Lucas
				M—4
			519c.	San Clemente
				M—4, n-5
			520.	Guadalupe
				M—5
			520.1	McGregor's
			521.	CROSSBILL
				Pair—5, n-4-5
			521a.	Mexican
				Pair—4

522.	CROSSBILL, White-winged	540a.	SPARROW, Vesper, Western
	G of 3—4, n-1-2		M—4, n-4
523.	ROSY FINCH, Aleutian	540b.	" , Oregon
			M—4
524.	Gray Crowned	541.	Ipswich
			Pair—n-5
524a.	Hepburn's	542.	Savannah, Aleutian
			Pair—4, n-4
525.	Black	542a.	Savannah
			M—5, 5, n-4
526.	Brown Capped	542b.	" , Western
			M—5, 5, n-4
527.	REDPOLL, Greenland	542c.	Bryant's
			M—4
527a.	Hoary	543.	Belding's
			M—3, n-4
528.	Redpoll	544.	Large-billed
			M
528a.	Hollboll's	544a.	San Lucas
			Pair
528b.	Greater	544c.	San Benito
			M
529.	GOLDFINCH	545.	Baird's
			M—5, n-5-5
529a.	Pale	546.	Grasshopper
			M—4, 4, 4, 5, n-4-5
529b.	Willow	546a.	" , Western
			M—5, n-3
530.	Arkansas	546b.	" , Florida
	M—3, 3, 4, 4, 4 of 5, 6, n-5-5		Pair
530a.	Green-backed	547.	Henslow's
			Pair—4, 4, 5, n-4
531.	Lawrence	547a.	" , Western
	4, 4, 4, 5, 5, 5, n-6		Pair—4
532.	Black-headed	548.	Leconte's
			Pair—5, n-5-5
533.	PINE SISKIN	549.	Sharp-tailed
			M—3, 4, 5, n-4
534.	SNOW BUNTING	549.1.	Nelson's
			M—4, n-5
534a.	Pribilof	549.1a	Acadian Sharp-tailed
			M—n-3
535.	McKay's	550.	Seaside
			M—3, 3, 3, 5 of 4, 5, 2n-1
536.	LONGSPUR, Lapland	550a.	" , Scott's
			Pair
536a.	Alaska	550b.	" , Texas
			M—3
537.	Smith's	550c.	" , Louisiana
			Pair
538.	Chestnut-collared	550d.	" , Macgillivray's
			Pair
539.	McCown's	551.	" , Dusky
			Pair—4
540.	SPARROW, Vesper	552.	Lark
	M—3, 3, 6 of 4, 5, 5, n-4		M—3, 5 of 4, 5, 5, n-5

552.a.	SPARROW, Lark, Western		570.	JUNCO, Arizona	
	Pair—3, 5 of 4, 3 of 5, n-4			Pair—3, 4, n-3	
553.	Harris's		570a.	Red-backed	M—4
	Pair—n-3		570b.	Gray-headed	M—4
554.	White-crowned		571.	Baird's	M—4
	Pair—4, n-5		572.	Guadalupe	M
554a.	Gambel's	M—4, 6, n-5	573.	SPARROW, Black-throated	
				F—4, 4, 4, n-3	
554b.	Nuttall's	M—2, 3 of 3, 6 of 4, n-4	573a.	Desert	Pair—4, 4
			574.	Bell's	M—3, n-4
557.	Golden-crowned	Pair—4	574. 1.	Sage	M—4, n-4
			574. 1a.	“ , Gray	Pair
558.	White-throated	Pair—3, 4 of 4, 5, 5, n-4	574. 1b.	“ , California	
559.	Tree	M—4, n-4	575.	Pine Woods	M—n-4
559a.	“ , Western	M—6	575a.	Bachman's	M—5, n-5
560.	Chipping	Pair—2, 2, 6 of 4, n-4	576.	Botteri's	M—5
			578.	Cassin's	M—4, n-5
560a.	“ , Western	M—5, 4, 4, 4, n-3	579.	Rufous-winged	M—4
561.	Clay-colored	M—3, 4, n-5	580.	Rufous-crowned	M—4
562.	Brewer's	Pair—4, n-4-3	580a.	Scott's	M—4, 4, n-4
563.	Field	Pair—4 of 3, 18 of 4, n-4	580b.	Rock	Pair—4, n-4
563a.	“ , Western	Pair—4	580c.	Laguna	M—4
564.	Worthern's		581.	Song	
565.	Black-chinned	M—n-3	581a.	Pair—1, 3, 7 of 4, 6 of 5, n-4-5	
566.	JUNCO, White-winged	M		“ , Desert	M—4, n-3
567.	Slate-colored	M—4, 4, 5, 5, n-3-5	581b.	“ , Mountain	Pair—5, n-3-4
567a.	Oregon	M—4, 4, 4, 5, n-4	581c.	“ , Heermann's	
567b.	Shufeldt's	Pair—4, n-5	581d.	Pair—2, 3 of 3, 4 of 4, 5	Pair—4, 4, 5, n-4
567c.	Thurber's	G of 3, 3, 4, 4, n-4-4	581e.	“ , Samuel's	
567d.	Point Pinos	M—4		F—5 of 3, 4, n-3-5	
567e.	Carolina	Pair—n-4	581f.	“ , Rusty	“ , Sooty
567f.	Montana	M—4, n-5	581g.	“ , Sooty	M
567g.	Pink-sided	Pair—n-4		“ , Brown's	
567h.	Ridgeway's	Pair			
567i.	Townsend's	M			

581h.	SPARROW, Song, Santa Barbara	588b.	TOWHEE, Oregon
	M—3, 5		M—4, 5, n-4
581i.	" , San Clemente	588c.	San Clemente
	M—3		Pair—4
581j.	" , Dakota	588d.	San Diego
	M—5, 5		M—3
581k.	" , Merrill's	588e.	Large-billed
	Pair		3
581l.	" , Alemeda	589.	Guadalupe
	Pair—4		
581m.	" , San Diego	591.	Canon
	Pair—4, 4		M—4, n. 3-3
581n.	" , Yakutat	591a.	San Lucas
			M—2
581o.	" , Kenai	591.1.	California
			Pair—4 of 4
581p.	Mendocino	591.1a.	Anthony's
			M—3, 4, 4, 4
581q.	" , Bischoff's	592.	Abert's
			M—3, 3, 3, n-4
581r.	" , Aleutian	592.1.	Green-tailed
	M—4, n-4		Pair—3, 4, 4, n-3-4
581s.	" , Suisun	593.	CARDINAL
			Pair—3, 4
583.	Lincoln's	593a.	Arizona
	Pair—5, n-4		Pair—3, n-3
583a.	Forbush's	593b.	San Lucas
			Pair—3
584.	Swamp	593c.	Gray-tailed
	Pair—4, 4, 5, n-4		F—3, 3, 4, 4, n-3
585.	Fox	593d.	Florida
	Pair—n-4		Pair—3, n-3
585a.	" , Shumagin	594.	PYRRHULOXIA, Arizona
			Pair—4
585b.	" , Thick-billed	594a.	Texas
	M—n-4		Pair—3, 3 of 4, n-4
585c.	" , Slate-colored	594b.	San Lucas
	M—4		F—3
585d.	" , Stephen's	595.	GROSBEAK, Rose-breasted
	M		G of 3—6 of 3, 4, 4, 5, n-4
585e.	" , Sooty	596.	Black-headed
	n-3		Pair—3, 3, 4, 5, n-3-4
585f.	" , Kadiak	597.	Blue
			M—3, n-4
585g.	" , Townsend's	597a.	" , Western
	M—4		M—4
586.	Texas	598.	BUNTING, Indigo
	M—3 of 4, 5, n-4		M—4 of 3, 4 of 4, n-4
587.	TOWHEE	599.	Lazuli
	Pair—3, 8 of 4, n-4		Pair—4, 5, 2n-4
587a.	White-eye	600.	Varied
	Pair—3, 3, 5		M—3
588.	Arctic	600a.	Beautiful
	M—4, n-4		F
588a.	Spurred	601.	Painted
	M—3, 4, n-3		Pair—4, 5, n-4

602.	SHARP'S SEEDEATER		619.	WAXWING, Cedar
		Pair—3, 3, 4, n-4		G of 3, 3 of 5, n-4-4-5
603.	GRASSQUIT	M-3	620.	PHAINOPEPLA
603.1.	Melodious	Pair—3, n-4		Pair—3, 3, n-2
604.	DICKCISSEL	Pair—4, 5, 5, 5, n-4-5	621.	SHRIKE, Northern
605.	LARK, Bunting	M—Pair & N—4, 5, 5		M—5, 7, n-5
607.	TANAGER, Western	Pair—3, 3, 4, n-4	622.	Loggerhead
608.	Scarlet	G of 3—3, 3, 4, 4, n-4		Pair—5, 6, 7, n-5
609.	Hepatic	Pair & N 4—Pair, 4, n-3	622a.	White-rumped
610.	Summer	Pair—3, 3, 4, 4, 4, n-4		M—5, 6, 7, n-5
610a.	Cooper's	Pair—4, n-4	622b.	California
611.	MARTIN, Purple	Pair—5, 5, 6		M—4, 5, 6, 7
611a.	Western	M—6	622c.	Island
611.1.	Cuban	Pair—6, n-5		6
611.2.	Gray-breasted	4	622e.	Migrant
612.	SWALLOW, Cliff	M—3, 6 of 4, 5, 5	623.	VIREO, Black-whiskered
612a.	Cliff, Lesser			Pair—n-3
612b.	" , Mexican		624.	Red-eye
612.1.	" , Cuban	3		Pair—N & Pair—2, 3, 3, 4, 4, n-4
613.	Barn		625.	Yellow-green
613.1.		M—5 of 3, 4, 5, 5, 6, n-4-6		M—5, 2 n-2
	European	5	626.	Philadelphia
614.	Tree	M—4, 5, 6, 7, Pair & N-6		Pair—3, n-4
615.	Northern Violet Green	Pair—4, n-5	627.	Warbling
615a.	San Lucas	Pair		M—3, 4, n-4
615.1	Bahama		627a.	" , Western
615.2.	European Martin	Pair—6		Pair—n-4
616.	Bank	M—5, 5 of 6, n-5	628.	Yellow-throated
617.	Rough-winged	M—7, 7, n-5		M—n-4
618.	WAXWING, Bohemian	Pair—5, n-5	629.	Blue-headed
				Pair—4, n-4
			629a.	Cassin's
				Pair—3, 3, 4, 2 n-4
			629b.	Plumbeous
				Pair—4, n-4
			629c.	Mountain
				M—4, n-4
			629d.	San Lucas
				M
			630.	Black-capped
				2, n-5
			631.	White-eye
				Pair—4, 4, 5, n-4
			631a.	Key West
				Pair—3, n-4
			631b.	Bermuda
			631c.	Small White-eye
				Pair—7 of 4, n-4
			632.	Hutton's
				M—4, n-3
			632a.	Stephen's
				Pair—3, 3 n-3
			632c.	Anthony's
				M—3

632d.	VIREO, Frazar's	652b.	WARBLER, Yellow, Alaska
			Pair—4
633.	Bell's	652c.	" , California
633a.	Least	653.	Mangrove
			Pair—3
633b.	Texas	654.	Black-throated Blue
			Pair—4, n-3
634.	Gray	654a.	Cairn's
			Pair—4, n-4
635.	HONEY CREEPER, Bahama	655.	Myrtle
	M—3, n-2-6		Pair—3, 4, 5, n-4
636.	WARBLER, Black & White	656.	Audubon's
	Pair—4, 5, 6, n-5		M—4, 4, n-5
637.	Prothonotary	656a.	Black-fronted
	N-6 & Pair—4, 4, 5, 7 of 6, 7		Pair—3, 3, n-3
638.	Swainson's	657.	Magnolia
			Pair—N & Pair, 10 of 4, 5, n-5
639.	Worm-eating	658.	Cerulean
	Pair—3, 4, 5, 6, n-6		Pair—4, n-4
640.	Bachman's	659.	Chestnut-sided
			Pair—N & Pair, 3, 8 of 4, 5, n-4-4
641.	Blue-winged	660.	Bay-breasted
	Pair—4, 4, 6 of 5, 6, n-7		M—4
642.	Golden-winged	661.	Black-poll
			M—4, n-4
643.	Lucy's	662.	Blackburnian
			Pair—Pair & N, 2, 3, 5, n-4
644.	Virginia's	663.	Yellow-throated
			M—4, n-4
645.	Nashville	663a.	Sycamore
	M—3, 4, 4, 4 of 5, n-4		Pair—3
645a.	Calaveras	664.	Grace's
			Pair—4, n-3
646.	Orange-crowned	665.	Black-throated Gray
			M—4, 2 n-4
646a.	Lutescent	666.	Golden-cheeked
			M—4, n-4
646b.	Dusky	667.	Black-throated Green
			M—4, 4, n-4
647.	Tennessee	668.	Townsend's
			Pair—4
648.	Parula	669.	Hermit
			Pair—n-3
648a.	" , Northern	670.	Kirtland's
	N-4 & Pair—M—1, 2, 3, 4, 4, 4, 5, 5		Pair—N & Pair, 5, n-4
649.	Sennett's	671.	Pine
			M—3 of 4, 5, 3 n-4
650.	Olive	672.	Palm
			M—4
651.	Cape May	672a.	" , Yellow
			M—2, 5
652.	Yellow	673.	Prairie
	M—Pair & N—1, 2, 2, 4 of 3, 4, 4, 5, 5, 5, n-3		M—4, 4, n-4
652a.	" , Sonora	674.	OVENBIRD
			M—2, 3, 4, 4, 7 of 5
	Pair—4, n-5		

675.	WATER THRUSH	M—5, n-5	698.	PIPPIT, Meadow	M—5, 6, n-5
675a.	Grinnell's	M—5, n-3	699.	Red-throated	M—5, n-4
675.	Louisiana	M—3 of 6	700.	Sprague's	M—5, n-5
677.	WARBLER, Kentucky	Pair—5, 4, n-5	701.	DIPPER	Pair—5, n-5
678.	Connecticut	M—4	702.	THRASHER, Sage	Pair—4, 6, n-5
679.	Mourning	M—4, n-5	703.	MOCKINGBIRD	Pair—3, 5 of 4, 5, 5, 5, n-5
680.	Macgillivray's	Pair—4, n-4	703a.	Western	F—4 of 3, 5, n-4
681.	YELLOW-THROAT, Maryland	Pair—10 of 4, 5, n-4	704.	CATBIRD	N & Pair, 5, 6 of 4, 3 of 5, 6
681a.	Western	M—5, 5, n-4	705.	THRASHER, Brown	Pair—2, 2, 7 of 3, 4, 4 of 5, 6, n-5
681b.	Florida	Pair—5, n-4	706.	Sennett's	M—3, 3, 3 of 4, 5, 5, 5, n-3
681c.	Pacific	Pair—2, 4, 4, n-3	707.	Curved-billed	M—3, 4 of 4
681e.	Salt Marsh	Pair—4, n-4	707a.	Palmer's	Pair—4 of 3, 4, 4, n-4
682.	Belding's	M	708.	Bendire's	Pair—3, 3, 3, 4, n-4
682.1.	Rio Grande	Pair	709.	San Lucas	M—5
683.	CHAT, Yellow-breasted	M—11 of 4, 5	709a.	Mearn's	Pair
683a.	Long-tailed	Pair—4, 4, n-4	710.	California	Pair—n-3, 6 of 3, 5 of 4
684.	WARBLER, Hooded	Pair—3, 18 of 4, 5, n-4	711.	Leconte's	M—4, n-4
685	Wilson's	M—5	711a.	Desert	M
685a	Pileolated	Pair—5, n-5	712.	Crissal	Pair—3, 3, 3, n-3
685b.	" Golden	Pair—3, 4, 4, n-4	713.	WREN, Cactus	Pair—3, 4, 5, 5, 5, n-5
686.	Canada	Pair—5, 5, n-5	713a.	Bryant's	M—5
687.	REDSTART	Pair—N & F, 7 of 4, n-3	713b.	San Lucas	M—5, 5
688.	Painted	M—3, n-4	715.	Rock	M—4, 6, n-6-7
690.	WARBLER, Red-faced	Pair—4, n-3	715a.	" , San Nicolas	"
694.	WAGTAIL, White	M—5, 7, n-6	716.	" , Guadalupe	M—3
695.	Swinhoe's	M—6	717.	White-throated	M—4, n-5
696.	Yellow, Alaska	M—5, n-5	717a.	Canon	Pair—6
697.	PIPPIT	M—4, 6, n-4	717b.	" , Dotted	M—6, n-5

718.	WREN, Carolina	Pair—5, 6, n-4-6	726c.	CREEPER, California	M—6, n-5
718a.	Florida	M—5, n-4-5	726d.	Sierra	Pair—4
718b.	Lomita	M—4, 5, n-5	727.	NUTHATCH, White-breasted	M—9
719.	Bewicks	M—4, 5, n-6	727a.	Slender-billed	M—7, n-9
719a.	Vigor's	Pair—5, 7, n-5	727b.	Florida White-breasted	M—7
719b.	Baird's	Pair—4, 5, 8, n-4	727c.	Rocky Mountain	7
719c.	Texas	M—4, 5, 4 of 6, n-7	727d.	San Lucas	
719d.	San Diego	M	728.	Red-breasted	M—4, 6, 7, 7, 2 n-6
719e.	Seattle	M	729.	Brown-headed	
719 f.	San Clemente	M	G of 3—3, 4, 4, 5, 5, 6, 7, 2 n-6, n-7		
720.	Guadalupe	M	730.	Pygmy	Pair—9, n-6
721.	House	M—5, 5, 6, 7, 7, 8, n-5	730a.	White-naped	M
721a.	" , Western	M—4, 5, 7, 7, 8, n-6	731.	TITMOUSE, Tufted	
722.	Winter	M—7, n-6	731.	Pair—3, 4, 5, 5, 6, n-6	
722a.	" , Western	M—5, m-5	732.	Black-crested	M—4, 5, 6, n-5
722b.	" , Kadiak		732a.	Sennett's	
723.	Alaska	6	733.	Plain	F—6, 9, n-8
723. 1.	Aleutian	5	733a.	Gray	M
724.	Marsh- Short-billed	Pair—6, n-6	733b.	Ashy	M
725.	" , Long-billed	M—4 of 4, 11 of 5, 6, n-7	734.	Bridled	Pair—5, n-5
725a.	Tule	M—5, 5, 5, n-5	735.	CHICKADEE	
725b.	Marsh, Worthington's	G of 3—4, 7, n-4	735.	M—3, 4, 6, 7, 8, 8, 10, N—8-6-4-S-3	
725c.	" , Western	M—5	735a.	Long-tailed	M—4, 6, n-7
725d.	" , Prairie		735b.	Oregon	M—5, 7, 7, 8, n-6-7
725e.	Marian's	Pair—5	735c.	Yukon	
726.	CREEPER, Brown	M—5, 6, n-5	736.	Carolina	M—5, 5, 6, 8, S-7
726a.	Mexican	Pair—6	736a.	Plumbeous	M—6, 6, 7, S-7
726b.	Rocky Mountain	M—5	736b.	Florida	
			737.	Mexican	M—5
			738.	Mountain	
			738a.	Pair—6, 9, S-7-8	
				" , Bailey's	

739.	CHICKADEE, Alaska	M—9	755.	THRUSH, Wood
740.	Hudsonian	M—8, S-6	756.	Pair & N—1, 3, 7 of 4, 5, n-3-5 Veery
740a.	Acadian		756a.	Pair—4 of 3, 4, 4, 4, n-4-2 Willow
741.	Chestnut-backed	M—7, 7, 8, S-7	757.	Gray-cheeked
741a.	California	Pair—6	757a.	Bicknell's
741b.	Barlow's	6, 6	758.	Russet-backed
742.	WREN-TIT	M—4, n-5	758a.	M—3, 3, 3, 4, 4, n-4 Olive-backed
742a.	Pallid	M—3, n-4	759.	M—3, 3, 4, 4, n-4 Hermit, Alaska
742b.	Coast	M	759a.	Pair
742c.	Ruddy		759a.	“ , Audubon's
743.	BUSH-TIT	M—8, n-7	759a.	Pair—4, n-4
743a.	California		759b.	Hermit
	M—5, 5, 6, 6, 7, 7, 8, 8, n-5-7		759c.	Pair—3, 4, 4, n-4
743b.	Grinda's	M	759c.	“ , Dwarf
744.	Lead Colored	Pair—7, n-6	759d.	M—n-3
745.	Lloyd's		759d.	“ , Monterey
746.	VERDIN	Pair—4, 5, 6, 7, n-4	759e.	“ , Sierra
746a.	Cape	M—3	760.	Red-winged
747.	KENNICOTT'S WILLOW WARBLER	M—7	761.	ROBIN
748.	KINGLET, Golden-crowned	Pair—9, 9, 9, 2 n-9	761a.	G of 3, 4 of 3, 9 of 4, 5, n-5
748a.	“ , Western	M—n-8-11	761a.	Western
749.	Ruby-crowned	Pair—6, n-8	761b.	Pair—3, 4, 4
749a.	Sitka	Pair	762.	Southern
749b.	Dusky		762.	Pair
751.	GNATCATCHER, Blue Gray		763.	VARIED THRUSH
	Pair & N—5, 4, 4, 4, 5, 5, n-5		763a.	Pair—4, n-3
751a.	Western		763a.	Northern
	Pair—2, 4, 4, n-5		764.	Pair—n-3
752.	Plumbeous	Pair—4 n-5	764.	SIBERIAN RED-SPOTTED
753.	Black-tailed	M—4, 4, n-4	764.	BLUE-THROAT
754.	TOWNSEND'S SOLITAIRE	M—3, 5, n-3	765.	M—6, n-5
			765a.	WHEATEAR
			765a.	Greenland
			766.	F—4, n-5
			766.	BLUEBIRD
			766a.	M—N-6 & Pair—3, 4 of 4, 4 of 5, 6, 6, 7
			766a.	Azure
			767.	Pair—4
			767.	Western
			767.	Pair—5, 6, n-6
			767a.	Chestnut-backed
			767a.	Pair—5, 6
			767b.	San Pedro
			767b.	Pair

The Warbler

768. BLUEBIRD, Mountain
Pair—5, 5 n-6

INTRODUCED SPECIES

This list contains only such species as have been introduced into the United States and are known to breed in a wild state.

PHEASANT, English

10
Ring-necked

Pair—11, n-9
Green

Pair

Silver	15
Golden	M—7-8-9
GROUSE, Black	Pair—10
Capercaillii	Pair—6
EUROPEAN GOLDFINCH	Pair—4, n-4
ENGLISH SPARROW	Pair—6, n-6
OSTRICH	4



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Eggs of the Knot

PLATE I.

Collection of European birds is now in
progress and sub-species are represented.

PLATE I.

Eggs of the Knot

(Three Colors)

This plate shows a set of three eggs of the Knot, photographed natural size and hand colored by Leavitt W. Brownell. The set was taken 23rd, 1909, at Polaken, north Iceland, by a collector sent out by Schleuter, Halle, Germany. There is no question as to the authenticity of the set, as the female parent was taken *on* the nest. The set is in the collection of the Chik-Floreal Park, New York.

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This edition of THE WARBLER is limited to 100 copies.

The last issue of THE WARBLER was in October, 1910. This number, therefore, stands for the years 1911, 1912 and 1913.

We still have on hand a limited supply of the volumes of THE WARBLER issued from 1905 to 1910, both inclusive. Eleven numbers in five volumes. Price for the set, \$2.00.

A fairly complete collection of the eggs of European birds is now in the Childs museum. About 900 species and sub-species are represented mostly in single but carefully selected sets.

PLATE I

Eggs of the Knot

(*Tringa Canutus*)

OUR plate shows a set of three eggs of the Knot, photographed natural size and hand colored by Leavitt W. Brownell. The set was taken June 23rd, 1909, at Folaken, north Iceland, by a collector sent out by Wm. Schleuter, Halle, Germany. There is no question as to the authenticity of the set, as the female parent was taken on the nest. The set is in the collection of Mr. John Lewis Childs, Floral Park, New York.

A Theoretical Analysis of the Colors of Familiar Warblers

By John Treadwell Nichols



HE writer has based this discussion on twenty-five species of Warblers¹ with which he is familiar in life. It is the relation between color, life histories, and habitat which is treated of, a large and fascinating subject to write on, and entirely beyond the scope of the present paper to deal with exhaustively. Its aim is then to touch only on a few salient correlations or problems and perhaps clear the field for further discussion or investigation.

It is hoped that readers unfamiliar with the plumages of the birds discussed will refer to some good plates or descriptions of them², but for the sake of completeness a brief review of plumages is given here.

Black and White Warbler. Black and white everywhere. The crown streaked lengthwise, some slight brownish wash, more pronounced in the young, which are, however not dissimilar to the adult female. Adult male with more black on the underparts and the throat black instead of white.

Golden-Winged Warbler. Gray, pale below, crown and wing patch yellow, the female with broad black throat and eye patches, separated from one another and the crown by white stripes, the black replaced by gray in the female. Tail with white markings. In the female the crown is greener than in the male, the golden patch on the wing more restricted, with a tendency to break into bars, and the upper parts washed with olive green. The young are still duller, with a heavy olive wash above and below.

Blue-Winged Warbler. Above olive green, crown and underparts yellow, crissum white. A narrow black noticeable, diagnostics line from the bill through the eye. Wings gray with two white bars. Tail marked with white. Females and young are somewhat duller with greener crown and duskier eyestripe, but essentially have the same plumage.

Parula Warbler. Adult male, above and wings gravish-blue, the wings with two conspicuous white bars which hold in all plumages. Tail marked with white. Breast yellow, belly white. Center of the back yellowish-green, a black patch before the eye. A black and brown band across the breast. Females and young have the eye patch and breast band reduced or wanting, the gray-blues washed with olive-green or becoming gravish olive-green. Nestlings are grayish white below.

Yellow Warbler. Yellow, becoming yellowish olive-green on upper parts, wings and tail dusky, edged and marked with yellow. Adult males are brighter with the underparts streaked with chestnut red. Young are more olive above, paler below. All plumages have some yellow in the tail, and almost all give the impression of a yellow bird.

1. Black and White, Golden Winged, Blue Winged, Parula, Yellow, Magnolia, Cape May, Black-throated Blue, Myrtle, Black-throated Green, Blackburnian, Chestnut-sided, Bay Breasted, Blackpoll, Palm, Prairie, and Yellow Palm Warblers; Ovenbird, Louisiana Waterthrush, Northern Waterthrush and Maryland Yellowthroat; Hooded, Wilsons and Canadian Warblers; and American Redstart

2. 1907. Chapman, Frank M. The Warblers of North America.

Magnolia Warbler. Wings and tail blackish. The former more or less edged with white, the latter with a broad white band near its base, which though reduced in the young is diagnostic of all plumages. Rump yellow. Below yellow, lower belly white. The adult male has the head and back gray, black patches on face, back, and upper tail coverts, and upper and lower parts heavily marked with black, and a large white patch on the wing. The female has those colors somewhat reduced, and the young have little white on the wing, are greenish above with yellow rump and grayish head, and have scarcely a trace of the black markings above or below.

Cape May Warbler. Crown black in the adult male, dusky grayish in female and young. Back olive-green marked with black in the adult male, in females and young becoming grayer and losing the marking. Rump yellow in the adult male, greener and duller in females and young. Tail marked with white in adult male which is much reduced in females and young. Wing with a large white patch in adult male, with obscure whitish edgings in female and young. A chestnut area including the eye and ear-coverts on the side of the head in the adult male, obscure grayish in females and young. The adult male has rich yellow underparts which color borders the chestnut on the side of the face in front running up in a narrow tongue over the eye, and extends in a broad cross area behind the chestnut almost to the nape. Females have the yellow of the male dull yellowish, fading posteriorly, and much restricted on the posterior side of the head, the young have it dull grayish, tinged with yellow. A narrow obscure streak from the bill through and behind the eye in all plumages. Underparts with prolonged black striping converging forward and with a tendency to run further forward in the center than at the sides of the throat, a slight character which, however, gives a rather diagnostic appearance.³ The striping is grayer and reduced in females and young. The one or two females of this species which the writer has observed in the field have been readily determinable from the resemblance in character of their markings to those of the male, though in color and intensity of markings they were quite different.

Black-throated Blue Warbler. Male, above wings and tail dark gray-blue. Face throat and sides black. Lower breast and belly white. Tail marked with white. A white check on the primaries near the middle of the edge of the folded wing. Female, above grayish olive green. Below whitish. The black of the male entirely absent. White check on the wing, almost always present and diagnostic, though reduced and sometimes concealed. The young resemble the adults of each sex but are duller and greener.

Myrtle Warbler. Adult male black, gray and white. A yellow blotch on the crown, on either side of the breast, and on the rump. White wing bars and tail markings. A large black blotch through the eye. Heavy black streaking of the under parts coalescing to form black areas bordering the yellow on the sides of the breast. In the females and particularly in the young the black and gray are much replaced by diffuse brownish. The streaking of the underparts is much reduced and weaker. In all plumages the streaking ceases abruptly, leaving an immaculate throat, a white or whitish bib appearance quite diagnostic of the species though not tangible to describe. Young fall birds have the yellow much reduced in intensity, but the yellow rump is a persistent diagnostic mark displayed when the bird is in flight.

Black-throated Green Warbler. Upper parts green. Wings with white bars. Tail with white markings. Face yellow. Throat and upper breast black in the male, more or less yellow, without black in females and young. Sides more or less marked with black, lower breast and belly whitish.

Blackburnian Warbler. Adult male in spring black and white above. Head black and orange. Throat orange. Belly white more or less suffused with orange or

3. See Myrtle Warbler.

yellow, sides streaked with black. Wing with a large white patch. Fall, female and young birds have the white wing patch reduced to two bars. The black and white of the upper parts more or less obscured by brownish or olive. The orange in varying degrees reduced and replaced by yellow.

Chestnut-sided Warbler. Wing with two well marked yellowish bars. Tail marked with white. Underparts and ear coverts white, more or less tinged with gray, especially on the latter in young and fall plumages. Upper parts yellowish-green. The adult male in spring has the crown bright yellow, rest of the upperparts heavily streaked with black, nape gray, a black stripe from nape through eye to base of bill and thence, making an acute angle, down sides of throat, where it becomes chestnut, broadens and is continued to the flanks. Adult spring females and fall males have those bright colors variously reduced.

Bay-breasted Warbler. Adult spring male with top of the head, throat and sides chestnut. Middle of the belly whitish. Forehead and face black. A buffy cross patch on the side of the neck. Back grayish-buff streaked with black. Wings with two white bars, tail with white markings. The young have the upperparts olive-green more or less streaked with black, underparts whitish, tinged with yellow on the throat, with buffy elsewhere, and lack the bold black and chestnut colors. Females and adult fall males have a more or less intermediate plumage. Wings and tail are rather constant in all plumages.

Blackpoll Warbler. Adult male in spring has a solid black cap and is streaked with black and gray above. The under parts and cheeks are white, the latter separated from the throat by a narrow black streaking which extends backward from the base of the bill. Sides streaked with black. Fall males, females and young are variously greenish above more or less streaked with black, whitish below, more or less washed with yellow, with or without black streaks on the sides. Wing with two bars and tail with white marking in all plumages.

Pine Warbler. Adult spring males are yellow green above. Yellow below turning to white on the belly, the underparts sometimes with a few streaks, the wing with white bars, the tail with white markings. The greens and yellows fade in other plumages. Fall, female and young birds are variously duskier, some specimens being peculiarly colorless and dusky.

Prairie Warbler. Above greenish, face and underparts yellow. Marks through eye, on side of throat, and on side of neck black in adult male, dusky and more or less obscure in other plumages, seldom absent. Wing bars yellowish, tail with white. Spring male with a chestnut area in the center of the back, of which there are sometimes traces in the female.

Yellow Palm Warbler. Adults in spring are brownish olive green above, brighter on the rump. Tail with and wing without white. Line over eye eye ring and underparts yellow. Streaked with chestnut below. Top of the head chestnut. Young and fall birds are duskier, the yellows paler, the streaking of the underparts grayer, the chestnut cap less pronounced or wanting.

Ovenbird. Above wings and tail, uniform brownish olive, below white, streaked with black. Crown bordered by two narrow dark lines, between which it is more or less orange-brown,—this color strongest and deepest in the adult spring male. A conspicuous light eye-ring.

Louisiana Water-Thrush. Above wings and tail, uniform brownish olive. A white stripe over the eye. Below whitish more or less strongly buffy posteriorly, streaked with dark. The throat unmarked. Plumages similar.

Northern Water-Thrush. Above wings and tail, uniform olive. A buff stripe over the eye. Below lemon yellow, streaked with dark, the throat more or less streaked. Plumages similar.

Maryland Yellow-Throat. Above wings and tail olive-green more or less washed with brown. Outer vane of outer primary whitish. Throat yellow, fading and be-

coming obscured by dusky on breast and belly, brightening again on under-tail coverts. Adult male with a black mask, bordered by grayish.

Hooded Warbler. Upper parts olive. Wing without bars. Outer tail feathers with white more developed than in other species, giving the appearance of white sides to the tail, when it is spread. Face and underparts yellow. In the adult male the face and forehead are yellow, surrounded by a broad black area, which comprises the crown, throat and upper breast. This hood is more or less imperfect in the young male, and more or less indicated, though not conspicuous in the female.

Wilson's Warbler. The adult spring male has yellow forehead, face and underparts, green upperparts, wings and tail, and a conspicuous black cap. The black cap is more or less obscured or wanting in females and young.

Canadian Warbler. Upper parts, wings and tail gray. Lores, eye-ring, and underparts yellow, a black necklace of spots across the breast. Females and young have the gray duller, yellow paler, and necklace more restricted and obscure, though seldom or never absent.

American Redstart. Adult male black. Lower breast and belly white. Sides of base of tail, sides of breast, and band on wing orange. Females and young above grayish olive-green, grayer on the head, below whitish, the orange of the male replaced by yellow.

The predominating lights in the woods and thickets where Warblers are found, are greens and yellows. The predominating colors in the plumages of these birds, taken as a whole, are greens and yellows. It therefore follows that in the main their colors harmonize with their surroundings, and render them inconspicuous. However there is another obviously possible explanation of this general reproduction in color of surroundings. Most colors are chemically deteriorated by light, and evidently the action of the absorbed light would be greater than of the reflected light. Green reflects green lights and absorbs red lights (which is what makes it green); it would therefore be the most permanent and useful color in green lights.

If we examine our species to see how far close relationship brings about similarity of plumage, we are struck by the fact that in the main it does not. Yellow, Blue-winged, and Wilson's Warblers, which are, perhaps the three yellowest birds, are classified at the three poles of the group. A closer view shows a strong undercurrent of phylogenetic resemblances in the secondary colors well illustrated by contrasting the Blackpoll and Baybreast, which are closely allied species. In high male plumage the wings with their bars, streaked backs, and pattern of the colors are similar, but the primary colors are entirely different, making an entirely different looking bird. The Blackpoll has a black cap, the Baybreast a chestnut one; the Blackpoll white on the side of the head, the Baybreast black; the Blackpoll beautifully white underparts, the Baybreast chestnut; and the area on the side of the neck where in the Blackpoll black and white streaking inconspicuously links the colors of the rest of the bird, is occupied in the Baybreast by a diagnostic cross buff blotch. In the females of the two species, the differences are much faded, the resemblances stronger, and the young are very difficult to distinguish. The whitish wing-bars occurring in these

two, and most of their even distant allies, might well have the concealing value of cross marks so ably emphasized by Thayer in arguing for the concealing coloration hypothesis. Their absence in species unrelated to these (Maryland Yellow-throat, Canadian Warbler, etc.,) indicates that they have been acquired by the distant common ancestor of the birds in which they occur, and are not a recent response to environment⁴. In certain species they become a white blotch in the high plumaged male which adds to the display of his colors (Magnolia, Cape May, Blackburnian.)

The resemblance of allied species, which we find between the Water-thrush and Ovenbird, can not be set down as an exception to the rule just brought forward of divergence of primary specific colors in close allies; as being concealingly colored, they have no true primary specific colors, excepting the crown patch of the Ovenbird, and furthermore resemble a Thrush in color, almost as much as they do one another. The closer resemblance of the two Water-thrushes which have different breeding ranges, however, shows where our rule breaks, namely as regards allied species occupying different ranges. Several of our species are represented in other parts of the country by allied birds which resemble them in color; as the Parula by the Sennets, and Black-throated Green by the Golden-cheeked in Texas and Mexico, and the Myrtle by the Audubon's Warbler in the West.

This would be explainable on the supposition that these species are recently derived from geographic races, which almost always are very similarly colored, being only slightly different each from the common parent form. The writer further inclines to the belief that were two such species to come to occupy the same territory, the mutual advantage of dissimilarity would force them apart.

In general the male Warblers are more highly colored than the females, or than the females and young. Often this high plumage is entirely different from the others (Blackpoll, Black-throated Blue.) The colors of such high plumaged birds make for conspicuousness, ready recognition and display, and it is most rational to assume that these are their biological functions. Such colors are typically blacks (Redstart, head marks of Blackpoll, Golden-wing, Magnolia, Maryland Yellow-throat, Hooded, Wilson's) grays (Black-throated Blue, Myrtle, Magnolia) and reds, as chestnut in streaks, blotches, or larger areas (Yellow, Baybreast, Chestnut-sided, Cape May, Yellow Palm) or as making orange of yellows (Blackburnian, Redstart.)

Yellows, however conspicuous they make the bird appear in a tray of specimens or on some unwanted exposed perch, are usually inconspicuous in the field. The writer's eye on diverse occasions has had partic-

4. It is perfectly true, however that the species without cross marks on the wing are, on the whole much more terrestrial or addicted to the lower growth, than those with such marks. And it might readily be argued that these marks have more concealing value to birds of arboreal habits.

ular difficulty in picking out Parula and Blue-winged Warblers among the foliage. Ordinarily when yellows add to the beauty of the adult male's plumage, they are also possessed, somewhat modified, to be sure, by females and young⁵. Perhaps the best illustration is the strongly yellow Blue-winged Warbler, which holds its yellow color through the different ages and sexes.

We find in various species of Warblers certain small definitely shaped markings, the chief value of which is doubtless for recognition. Though sometimes subdued, they hold their character well through the duller as well as the brighter plumages of the species, which would be expected, as these are the least easily recognized from their general appearance. The markings referred to are in the main conspicuous in nature, though not overly so, and often are placed where they are hidden except when the bird is in motion or displays them by its attitude. The writer would classify as recognition marks, the face marks of Prairie Warbler and Blue-wing; the yellow in tail of the Yellow, yellow rump of the Myrtle, and yellow face of the Black-throated Green Warblers, the white basal tail band of the Magnolia Warbler, white sides of the Hooded Warbler's tail, and white check in the wing of the Black-throated Blue; the yellow eye-ring of the Canadian Warbler and cloven yellow base of the Redstart's tail.

Three of our species, the Ovenbird, Northern and Louisiana Water-thrushes, have a thrush-like plumage. It is significant that these feed on the ground in the shade like the thrushes. Probably their type of plumage is particularly adapted to conceal its wearer. The bobbing tail of the Water-thrush which renders that bird conspicuous in spite of its highly concealing plumage, has in the writer's opinion a purposefully advertising function, like the incessant calling of certain concealingly colored Mammals.⁶

One of the most familiar species, the Black and White Warbler, has an almost Woodpecker-like habit of clinging to tree trunks and branches. It is interesting that this is also the species which has the black and white Woodpecker color, good evidence that there is a correlation between the color and habit, but what is the correlation? Concealing coloration will not explain it. From a man's eye view a black and white bird on a tree trunk is decidedly conspicuous, and it is not so much the white underparts, which would be seen by an insect, and which are common enough in birds, but the black and white upper parts which we are trying to explain. Recognition does not seem an adequate explanation when we consider that a similar plumage is possessed by the Woodpeckers. The plumage display is made to appear improbable by the plumage being possessed little changed in both sexes and in the young. It is of course possible to fall back upon the unsatisfactory theory that the color is determined by special, tree-trunk food,

5. The yellow crowns of the Chestnut-sided and Golden-winged Warblers are an exception.

6. 1912. Nichols, J.T. The Auk. Vol XXIX p. 48.

but the writer prefers the more daring one that the eye of these birds, accustomed to the contrast between dark trunks and branches and sky highlights, can handle a black and white plumage most readily, or prefers it aesthetically.

We can then consider the greens and yellows common in the group, and the special Thrush-like colors of Ovenbird and Water-thrushes as concealing coloration, the wonderful diversity of color among the different species, as well as certain markings peculiar in position, color or shape (note the differently shaped white areas on the tails of Magnolia and Hooded Warblers) as a uniform enabling the species each to readily recognize its own; the high colors of the spring male as advertisement and display; and explain the woodpecker-like color of the Black and White Creeper, on aesthetic grounds.

It is thus found that the colors of the familiar Warblers considered may be so far explained on the grounds of phylogeny and various more or less conflicting biological utilities, as to lead to the conclusion that these colors are by no means a haphazard product of evolution, but are controlled or determined by natural selection or some other force which is constantly adapting the bird to its complicated environment.

A Nesting Season in Nova Scotia

By Harold F. Tufts

 MPELLED, I think, by something akin to that instinct which guides the birds so surely northward each recurring spring, to the land of their birth, I find myself with almost equal regularity returning with them to the fields and forests of the northland country—mine as well as theirs. And what a delightful spring-time and summer-land in which to sojourn—those northern wildernesses!

Arriving early in May at the little backwoods village—Caledonia, in the Province of Nova Scotia—I soon found in the varied nature of the surrounding country an ideal field for the operations of an ornithologist.

Within a few miles of Caledonia, two large streams—the Liverpool and Port Medway Rivers—find their sources in the lakes and swamps that here abound. In this elevated, gently undulating region, are large areas of almost virgin forests and treeless “barrens,” varied with reaches of wild meadow and bushy swamp or open bog. Underlaid with “whin” rock, much of it outcropping on the surface and with boulders strewn about, the land offers little inducement to the agriculturist, and except for the operations of lumbermen and destructive fires, is much as nature intended it—the home of wild creatures.

Here in early May were yet traces of winter—scattered patches of snow and ice in the sheltered nooks of the forest. But the days were warm in the sunshine and already the Snipe were calling from the alder fringed meadows, and day and night could be heard “winnowing” high up in air. Foraging Canada Jays were abroad with their broods already full-grown and capable. Chickadees, Nuthatches, Woodpeckers, Kinglets, Winter Wrens, Sparrows, Juncoes, Finches and Thrushes were all in evidence and with song and active forms enlivened the gradually freshening landscape.

Each day now brought new arrivals from the South. Myrtle and Yellow-Palm Warblers were here in full numbers by the 8th of the month—Black-throated, Green and Magnolias showed up on the 12th, with Least Flycatchers and Solitary Vireos. Then through the ensuing weeks came the great bulk of the summer Warblers, and last to arrive—about the 20th to 23rd—the Flycatchers, Olive-sided, Yellow-bellied and Trail’s, and on the 25th, the Nighthawk.

My daily wanderings afield during these days were full of interest. Pushing my way through the dense stunted spruces fringing the bogs and forested hills, I frequently discovered the now empty nest of the Canada Jay. Never more than ten or twelve feet from the ground, the bulky nest is easily

seen if once you come into its neighborhood in the forbidding thickets and swamps. Nests as large as a hat—a man's "derby"—a thick mass of twigs, mosses and bark shreds, with deep cup-shaped hollow, thickly lined with feathers of Owl or Grouse, are these late-winter homes for the growing young "Meat Hawks" or Canada Jays.

Hours and hours, day after day, spent in the wet alder swamps, where always were Snipe, failed to yield a nest of these elusive, long billed, ooze probers.

On May 15th I found the first interesting set of eggs for the season—that of the Rusty Grackle. In a low spruce, 5 ft. up, at the edge of forest fringing a bog-margined lake, this nest was placed on the horizontal limbs—a firm structure of twigs and moss, cemented with mud and lined with fine, dried, green grasses. Five fresh eggs were its contents—as large as a Robin's, green-gray, beautifully marked with black and dark lavender.

On the 17th of the month, a real surprise in the form of the nest and eggs of the Canada or "Spruce Grouse" was my good fortune. Traversing an almost barren rocky knoll, some two acres in extent, situated like an island in a sea of dense spruce forests and bush-grown bog, I happened to note the dusting wallow of birds, around which were feathers from the Canada Grouse. A little later from under my very feet, came the startling whirl and clatter of wings as a hen Grouse left her eggs. Alighting but a few yards away, she began a low clucking, as with drooping wings and head, she slowly walked toward and around me. The nest, a mere hollow in the gravel under the low branch of a spruce, was lined with dead leaves of birch and some feathers from the bird's own breast—it contained six eggs, evidently a full complement, since two days later, visiting the nest again, I still found but six. Two more nests of the Canada Grouse were discovered within a few miles of the one just referred to—one on the 18th and another on the 25th. Both of these were similarly situated in the dry, open "barrens" near bogs and densely wooded swamps, concealed under low spruce bushes, and each contained six eggs. Besides the three hens found on the nests, but one other Spruce Grouse was seen during the season, a male near the first nest, and so absurdly tame that he allowed me to push him with a walking stick, resisting that action in a manner almost pugnacious.

On May 15th, both Ruby and Golden-Crowned Kinglets were observed carrying material with which to build nests, though it was June 1st before eggs were laid by either.

Ruby-crowned Kinglets are almost a characteristic summer bird of the spruce and fir thickets bordering the lakes and bogs of this region, their sprightly song and chatter everywhere greeting the ears during the spring and early summer. Their nests are not readily found—not at all so—indeed, except the bird be traced while carrying building material to the nest,

there is little chance of one's discovering the nest at all, no matter how sharp the eyes nor persistent. The discovery of each of the two nests taken that season was due to careful and wary watching of the female bird while carrying material to her nest. In one case I noted the bird tearing the lining from an old nest of the previous year and transporting it, bit by bit, to the new one some twenty rods away through the thicket, where her movements were most difficult to follow. These nests were in small, slender spruces 15 to 25 feet high with thick bushy tops into which, close to the trunk and partly pensile among the clustering twigs, the neat little homes were concealed. About the size of a baseball, and almost as round and smooth, made of green ground-mosses and plant down, the nests were so snugly hid away and in color so blended with the spruce twigs as to be invisible to keenest eyes from the ground. The entrance to the nest was at the top, and so small and deep was the hollow that the feathers which lined it curled over the opening, obscuring the eggs or young during the mother's absence. Parting these protecting feathers and looking closely into the deep, dark, little cavity one might see nine or ten tiny white eggs piled two tiers deep at the bottom.

The Yellow-Palm is a really common Warbler in this and similar districts of Nova Scotia, where it breeds abundantly. The song of this bird is a wheezy warble which, coming from some low perch in the bushy bogs and barrens that they frequent, is a most characteristic bird note during the bright spring days.

The first nest of this bird was discovered on May 20th, and contained 5 eggs. During the next ten days many more were found, some with five, more with four eggs. Later still, in June, nests were noted containing young in various stages of development. On June 25th, a nest with four fresh eggs was noted, and on July 6th, one in process of building, though this one when completed was not further used. Some dissimilarity of location of nesting-site was displayed by these birds. Thus the most frequent site was on the dry "barrens"—(though never far from water or wet bog)—where the nest would be attached to the dried stalks of a cluster of last year's brakes, whose now fallen tops formed a sheltering canopy overhead—below the nest rested lightly on the ground. Sometimes a mossy tussock in a bog or swamp would be selected, into the side of which, under overhanging grasses, the nest would be hidden away. Again, nests were found at the bases of small spruces or fir bushes in open woodlands, sunk into the moss and concealed by low-lying, thick branches. During this past spring of 1910—a wet one in Nova Scotia—I found one nest of the Yellow-Palm among the branches of a little spruce bush three feet above the wet ground. The nests were all rather loose and bulky, composed outwardly of twigs and grasses and lined with fine grasses or hair and always with feathers. Upon

flushing from the nest, under your feet, the female Yellow-Palm lamely flutters away, showing plainly her characteristic white outer tail feathers. Should you follow her she will lead you away, always fluttering distressedly just in front, but if you stop at the nest she soon ceases her attempts to deceive and now shyly approaches, hopping and flitting nervously about, uttering sharp notes of protest and alarm.

During the last two weeks in May Hudsonian Chickadees and Red-breasted Nuthatches lay their eggs—the former in natural cavities in low decayed stumps in swamp or dense thicket of spruce and fir. The Nuthatches select some dead tree stump in open woods or forest grove and at some considerable elevation excavate, like the Woodpeckers, their own little burrows.

Throughout the month of June, with all the small summer birds building nest or incubating their eggs, the interest of the collector was at the keenest. In the old bushy woodland pastures were Nashville Warblers singing brightly near their mates hidden away on the nest in some sheltered mossy bank.

Black-throated Green, Magnolia and Myrtle Warblers' nests were to be found by careful search and watching among the spruces, firs and hemlocks of the thickets and big woods. Down in the moss-grown, shady depths of the ravines, among the underbrush of beech, maple, moosewood and seedling conifers, were Canadian Warblers in numbers, but to find the nest—that was not easy. Along the wooded shores of lakes and ponds, among the bunches of "beard" moss which festoon-like, drape the dead branches and stumps, nests the dainty little Parula Warblers. In the heavy mixed timber of the logging woods on the hills, are Black-throated, Blue and Blackburnian Warblers, almost always found together, the former hiding its neat little nest away, close to the ground, in a tiny seedling fir or spruce, while the latter saddles its home of twigs and grasses upon some wide spreading branch of giant spruce, usually forty or fifty feet above the ground. In these same heavy forests, especially where fir and hemlock abound, are found the Solitary Vireos—their pensile nests, always attached among twigs at the extremity of the limbs of conifers, large and small.

By the end of the first week in July, many young birds are on the wing, following or followed by their watchful parents. Other young still in the nests, with ever-greedy mouths, keep their parents busy supplying their wants. So now the bright songs are much less frequent. Soon after, the birds, young and old, retire to secluded spots, there to change their plumage and recuperate after the arduous duties of parenthood, gathering strength for the long Southward journey soon to begin. In like manner the ornithologist's interest in his rambles and studies dwindles, till again, like the birds, restlessness seizes him and other lands entice.



Hitherto Unfigured
Psittacula carolinensis

By Henry Thurston

Getting over the collection of North American birds owned by the Honorable John Lewis Childs of Flushing Park, N. Y., I came across the skin of a Carolina Paroquet (*Psittacula carolinensis*) which I have never seen.

The color of the body and wings were not so bright as in the adult bird except for being slightly brighter with the quill edges more yellow, also the bend of the wing was just acquiring the yellowish orange feathers that are possessed by the mature bird. The most striking difference was shown by the head, which was entirely green excepting the forehead, lores, the sides of the neck and the feathers around the base of the bill.

Little Known Plumage Phase of the

Carolina Paroquet possesses, and found none there approaching this specimen in color, though an interesting one seems to be a few stages in advance of this. The bird was a young one and shows considerable yellow feather mixed with the green covering of the head. My search for an ornithologist familiar with this phase of plumage met with no better success.

Several of our leading bird men stated they had never before observed a "Poll" in this plumage, and one questioned the normality of it.

An investigation of literature gave some clues, making it quite probable that this skin is a typical first year bird. Audubon does not seem to be very well acquainted with such a stage of plumage as he does not figure it and describes the young bird as a green head. In the biography of the species previously mentioned it is mentioned that toward autumn a frontlet of carmine appears. This band might appear carmine in the field, so one may suppose the great naturalist never had a bird in the plumage as are figured in his hands.

It is probable that this is the only existing example of a juvenile Carolina Paroquet, and if so its value is greatly enhanced, scientifically, by the fact that it is collected by Mr. A. T. Wayne. This means a beautiful, smooth

Conselho Basadre

PLATE II

An Apparently Heretofore Unfigured Plumage of *Conuropsis carolinensis*

By Henry Thurston

IN going over the collection of North American birds owned by the Honorable John Lewis Childs of Floral Park, N. Y., I came across the skin of the Carolina Paroquet (*Conuropsis carolinensis*) in a phase of plumage entirely different from any I have ever seen.

The colors of the body and wings were nearly identical to those of the adult bird except for being slightly brighter with the quill edgings more yellow, also the bend of the wing was just acquiring the yellowish orange feathers that are possessed by the mature bird. The most striking difference was shown by the head, which was entirely green excepting the forehead and lores, these two regions bearing orange feathers tipped with crimson that gives the appearance of a reddish film over the predominating forehead color.

I received permission to compare this skin with the extensive series that the American Museum of Natural History possesses, and found none there approaching this specimen in color, though an interesting one seemingly a few stages in advance of Mr. Childs' Paroquet was found. This shows considerable yellow feather mixed with the green covering of the head. My search for an ornithologist familiar with this phase of plumage met with no better success.

Several of our leading bird men stated they had never before observed a "Poll" in this plumage, and one questions the normality of it.

An investigation of literature gave some clues, making it quite probable that this skin is a typical first year bird. Audubon does not seem to be very well acquainted with such a stage of plumage as he does not figure it and describes the young as having a green head. In the biography of the species preceding his description he mentions that toward autumn a frontlet of carmine appears. This band might appear carmine in the field, so one may suppose the great naturalist never had a bird in the plumage as here figured in his hands.

Wilson refers to a plumage similar to the one under discussion, but also fails to figure it.

It is probable that this is the only existing skin of a juvenal Carolina Paroquet, and if so its value is greatly enhanced, scientifically, by the fact that it was collected by Mr. A. T. Wayne. This means a beautiful, smooth

and carefully made skin, as well as complete data. This bird was taken at Lake Loehe, Polk Co., Fla., Oct. 7th, 1892.

The plate does not give the bright shade of color to the frontal band but admirably shows the boundaries of the orange-crimson tint.



Japs Not Responsible for the Bird Slaughter on Layson

MUCH has been published and universal indignation expressed concerning the destruction of Albatross on Layson Island. Reports state that a Japanese expedition landed on the Island and killed several hundred thousand birds for the down and plumage:—that the birds were mostly taken alive and starved to death in pits in order to reduce the oil or fat in their skins. All of this is true with one exception.

It was not a Japanese expedition that destroyed the birds, but a former keeper or warden of the Island is said on reliable authority to have headed the expedition, and the Japs who did the work were in his employ. It is gratifying to know, however, that the expedition was not profitable to its promoter, and my friend, Mr. G. Willett of the Biological Survey, had the satisfaction of confiscating and burning all the many tons of down and feathers that were collected.

J. L. C.

A Collecting Trip to Little Diomede Island

By Johan Koren

ON August 21, 1910, the "Teddy Bear" again was ready to leave for the Arctic, and I joined her, as I now had opportunity to get another visit to the Diomede Islands. For although the egg season had long ago passed, I hoped to be able to secure at least downies of the more remarkable species that breed there.

In fair weather the schooner used to make this trip in less than 20 hours, but a regular gale from the N. W. gave us so much trouble to fight, that I did not reach my destination until the 25th of August. First the vessel broke her rudder and had to seek harbour in Port Clarence, where she had to be unloaded and pulled upon the beach to get fixed, and this alone delayed us nearly two days. Next we had to lay over for storm at Tin City, Cape Prince of Wales, before entering the Strait. But at last, on August 25, the weather cleared, and the storm abated. The Captain said that this was the first time he ever saw the Diomedes without fog. This morning we could even plainly see hills of East Cape, and whalers across the strait, about 45 nautical miles wide, before leaving Tin City, and it is certainly not every day a person, while standing on American territory, can enjoy the sight of the coast of the Asiatic continent.

When crossing the strait a great number of Pacific Fulmars were seen, birds, that, strangely enough, do not breed on any of the islands in these waters. I left the schooner at the Eskimo village on Little Diomede, which island it may be commonly known, belongs to the United States. (The Big Diomede is Russian territory.)

The natives of both the Diomede Islands belong to the same race of Eskimos as those on the Seward Peninsula, of Alaska, and they have an altogether different language from that of the Tchouktchees. The United States have furnished a mission or schoolhouse for the little village of about 150 souls on the Little Diomede, and a school-teacher, who also acts as a minister. The school-teachers on this lonely place usually change every two years and at the present time the Eskimos were without any, awaiting a new man before the close of navigation.

The Diomedes are certainly the most interesting and strange looking islanders in the world. I shall certainly always remember the quaint impression I received when landing at the little Eskimo village situated on the rookeries of seabirds and swarmed around by clouds of small divers. The huts of these natives are chiefly built of stones in the loose rocks of the steep hill-

side, and as they are practically underground dwellings, these Eskimos may be rightly called rock-dwellers. I visited a few of these original huts and in order to enter the same I had to walk through a low and narrow twenty feet passage, through the rocks. At the end of the passage, to my astonishment, my guide disappeared through a round hole in a little wooden floor, telling me to do the same. After entering this small cellar, I was guided up through another hole a little farther in, which proved to lead up through the floor to the living room. These huts are built almost air tight, the interior being of wood, outside of this a layer of clay fills up the hollows between the stones resting directly on the walls. The only light passes through a skylight made of walrus-gouts sewn together in a square sheet. In every one of the four corners of the room, wooden oil lamps have their places and serve as cooking stoves as well as general heaters. The odor in a hut of this kind is something fierce, and a white man will hesitate to try it for any length of time, unless he has to. I made several attempts to take a photo of such an interior, but in vain, for as soon as I entered, my camera began to "shed tears" in the damp and hot air, and I had to hurry out again. A few of the more well-to-do families live in canvas tents during the summer months.

The next day after my arrival, (Aug. 26), I thoroughly searched the western coast which was all the territory I could manage by foot, without doing any regular mountaineering, across the island. The species of birds that especially dominate the Diomedes by their great numbers are the Least Awk and the Crested Awk. They breed practically on every spot of the Little Diomede where there are stones or loose rocks or suitable places to dig holes in the ground. They nest even among the stones of the natives' huts, and wherever I walked over stonelayers, whether it be along the beach or on the topmost hills, I heard their whistling and screeching in all kinds of tones beneath my feet for every new step.

Now the birds being so numerous it may be expected that the collecting of a great number of eggs or young, on such a place, would be an easy matter. But it certainly was anything but easy. It proved that the birds breed so deep down in the loose rocks that their brood, in most cases, was pretty safe from pursuers. I do not know how many times I tried to dig down for these quaint bird homes (and only tried on the most favorable looking places) by throwing away all the stones in my way, sooner or later to be faced with some immense-sized rocks that told me my efforts were in vain. Nevertheless, I succeeded in time in securing a limited number of laid-over eggs, and young of these birds.

The eggs were found on the naked rocks or damp clay, the underground hollows being always wet and slippery by water overrunning down the hillsides.

The Paroquet Auklet, also is a common breeding species on the Diomedes, though not by far so abundant as the above previously named species. They seem to prefer holes in the ground for nesting places and were therefore mostly found on the few grass-grown patches in the hillside where loose rocks were less numerous, as well as under the turf, on the edge of the sky rockwalls along the coast, the same localities occupied by the Puffins. But occasionally the Paroquet Auklet I found breeding in rocks and stones also; as well I observed a number of Least and Crested Auks to nest in the vegetation.

On the Northwestern point of the island is a rookery of Pacific Kittiwakes, Pallas Murres and Puffins (Horned and Tufted). The only way to get at a part of this rookery is from above, and though this was a difficult, not to say a dangerous bit of climbing, I managed it all alone. On one place I had lowered myself by a rope to descend upon the highest shelf of the steep rock wall. The great majority of the young Kittiwakes were at this time more than half fledged and quite a number of them flew away at my appearance. While passing around the sharp corner of the cliff and seeking a grip for my hand in a crack, I got without the slightest warning so violent a bite in my fingers, that I quickly pulled them back. It proved to be a Horned Puffin that made this unexpected attack on my person, and as the crack was partly overhung with turf, and situated above my head, I afterward discovered that if my foothold had been less firm, it might have caused me a fatal fall.

Most of the young Murres, yet to be seen, were at the stage when they made the plunge from their high cliffs into the sea beneath. They all looked so young and small to me, when I reached this little colony, that I never expected them so far developed and was therefore much surprised, when upon trying to catch them by hand, to see one after the other jump off their shelf and sail some sixty or seventy feet down through the air like small torpedoes. Upon striking the water they dove and swam a good distance under the surface as if this sport was an old one to them. I managed however, to catch a few young of this age and though their wings were of minimum size and wholly unfit for flight, the rest of the body was full feathered. The average length of the young Murres at the stage ready to make the dive was found to be $8\frac{1}{2}$ inches, while the adult birds measured from 16 (male) to $17\frac{1}{2}$ (female) and by this early development of its young the Murres (and its cousins the *Alca torda* of the N. Atlantic) differ from all other divers breeding in cliffs. The young of all species of Puffins, Gullimats, Auks, etc. keep their downy plumage till they are almost full grown, and stay on their nesting ground till they are full fledged and able to fly.

A number of Cormorants were observed flying around the coasts and four specimens secured proved to be *Phalacrocorax bicristatus* in fall plum-

age. At the time of my arrival at the Diomedes (Aug. 25) most of the Auks had begun to shed their ornamental feathers of the breeding plumage. The Least Auks were losing the little horny knub on their beaks and the Crested Auks, their picturesque tufts as well as the peculiar, red, waxy, sheaths of their bills. Still I succeeded in picking out a number of specimens of these birds in perfect breeding plumage.

Considering the fact that the natives during the whole summer live almost solely on the meat of small Auks, it is remarkable that these species, that only hatch one young a year, can abound here in such countless numbers. Twice a day the women of the village would look at their snares, that, fastened to sticks or iron rings are laid on the rocks, where the Auks in great number would sit down and rest.

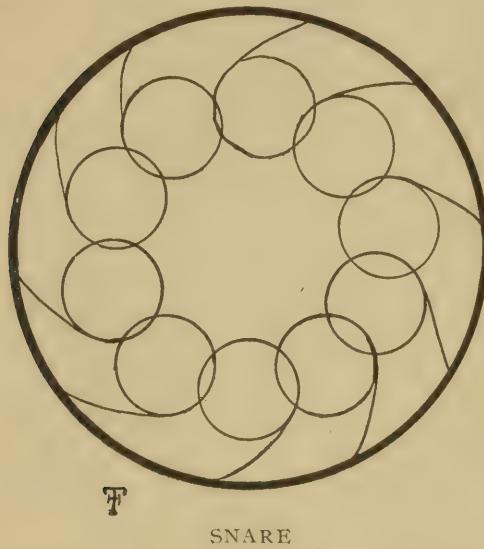
As most of the birds are caught by their legs and taken alive they are killed by the squaws with a bite in the head. Every day many dozen of the pretty little creatures have to lose their lives and serve as food for a single Eskimo family on the Diomedes. Other species observed during my stay on the Little Diomede were: Point Barrow Gull, Vega Gull, (migrating) Pigeon Gull, Gullimot, Tufted Puffin, Raven, Snowflakes, Redpoll, and one solitary Swinhoe's Wagtail.

From one of the natives I purchased three specimens of the Ruff, all males, made up nicely into skins, which were filled with

Reindeer hair. They were killed around the 25th of May the same year.

A few notes regarding my observations may be of interest, as they illustrate the irregularity in the breeding of the species they concern:

Aug. 26.	Pallas Murre.	Young about 5 days old.
" 26.	"	Feathered just ready for the sea.
" 31.	"	New Hatched downy.
Sept. 1.	"	Eggs about ready to be hatched.
Aug. 26.	Horned Puffin.	Newly Hatched Young.
" "	"	About 12 days old.
" 30.	"	Newly Hatched Young.
Sept. 1.	"	Eggs about to be Hatched.
" 1.	Paroquet Auklet.	Half-fledged Young.
" 1.	"	About 7 days old.



Aug. 30.	Paroquet Auklet.	Newly Hatched Young.
“ 28.	Crested Auk.	Half-fledged Young.
“ 31.	“	About 8 days old.
Sept. 1.	“	About 5 days old.
Aug. 26.	Least Auk.	Eggs ready to be hatched.
“ “	“	Newly Hatched Young.
“ “	“	About 5 days old.
“ “	“	Full-fledged Young.
Sept. 1.	“	Newly Hatched Young.
Aug. 26.	Pacific Kittiwake.	Downy, about 7 days old.
“ “	“	Half-fledged Young.
“ “	“	Flying Young.

Sept. 1. Sabine Gull. Flying Young.

On Sept. 2, the gasoline schooner "Mary Saches" of Nome arrived with the school-teacher and his supplies for the following ten months.

When I saw the man I could not help pitying him, for he was a mere kid, evidently just from the seminary, and he was bringing his young bride along with him. Rather a strange place to choose for a honeymoon I thought, when looking over the stony guano-stinking place, that offered not even a decent foot path; an island seemingly more fit for seabirds than human beings, with the only exception of Eskimos. And when I thought of the eight months, through the stormy, dark season, when they would be entirely isolated from the outer world with only natives for company, I pitied them the more, especially the young bride, for she looked too delicate and tender to be able to appreciate that kind of life. But there were at least two good reasons for rejoicing: they would have a first-class house for a home, and they would have a very nice lot of natives to work with.

As I was all through with my collecting here by this time, I decided to return with the schooner which was leaving as soon as the mission supplies were unloaded, and with my best wishes to the young couple, who would fight the winter storms on this little spot in the "Frozen Seas" and with the promise to see them again next year, I left at night the same day for the City of Nome, a few weeks later to seek more temperate latitudes in the United States, for the winter.

Notes on the Nesting of Bobwhite at Flowerfield, L. I.

By John Lewis Childs

MY bulb and seed farm of nearly 1,000 acres at Flowerfield, L. I., is a Bobwhite paradise. For years this bird has not been shot, hunted or purposely molested in any way. Food is abundant and ample cover and refuge is found in the numerous hedges and small thickets, scattered here and there. They have become not only abundant but very tame, nesting about in the most exposed and frequented places.

I have found them particularly abundant in the vicinity of a large dense grove of red cedar which is, by the way, the most beautiful thing in rugged nature I have ever seen. The grove is perhaps 10 acres in extent advantageously situated on a slight elevation, the ground sloping gently away from it on all sides. To the south the grove shows an unbroken line for nearly 1,000 feet; all deciduous trees have been removed from this side and the cedars present a solid wall up to the sky line, where it breaks into a thousand spires. Here and there an old patriarch stands a little out from the line like a massive pillow. The wind moves this dense bank of foliage much as it makes ripples on placid water. Lights and shadows have their play and the eye is rested as it lingers with delight upon the richness and denseness of the most beautiful dark green color which nature shows. At one spot half a dozen spires support a mass of American woodbine, which I was once on the point of cutting out and thankful I am that I did not, for passing that way one morning next Autumn I found that these spires had flamed out like beacon lights, and against the surrounding masses of rich green they made a picture which I have never seen equalled in autumn foliage color. This grove of red cedars has been an object of beauty for nearly a hundred years and may it stand for centuries to come in all its rugged grandeur, a delight and pleasure to look upon every day in the year. In summer its denseness, its darkness, and its richness contrast wonderfully with the verdure and lighter green of other foliage. In autumn when browns, and crimsons, and fading greens, and dull yellows are conspicuous it is superfine. In winter it is like a rich gem in a colorless matrix, but when surrounded by a mantle of snow it stands out upon the landscape more beautiful than at any other time. It harbors the cottontail, the elegant gray squirrel, the chip-munk, the exquisite whited-footed mouse, and the wary marmot. In spring the song of the black-throated green warbler is heard the livelong day, a bird I have found breeding at only one other place on L. I. The green heron comes regularly to this beautiful grove to nest and here the ring-necked



BOBWHITE N-15, HATCHED

pheasant and bobwhite flourishing undisturbed. Within a radius of a hundred feet of this grove not less than seven nests of bobwhite were accidentally discovered during the season of 1912.

The first nest found was in tall grass only a few feet from the road which surrounds the grove. It was well concealed and beautifully arched over, like the nest of the oven bird. It contained 15 eggs. The female was flushed but subsequent visits showed that the male also took his turn at sitting. The eggs were hatched some time between July 7th and 10th. When I visited the nest on the latter date every egg shell had been cut in a regular line a little to one side of the center and in most cases the smaller end had been turned inside the larger half. Every shell lay in the bowl of the nest just as I had seen the eggs before hatching.

A photograph was taken and the nest collected *in situ* and is now in my collection, an interesting study of "Bobwhite, N-15, hatched." A few hundred feet down the road another nest of 16 eggs was discovered by our mower after he had cut the grass and brush from over it. The bird returned to the nest and continued to incubate fully exposed and only six feet from the road where many teams, autos and people on foot were continually passing.

One forenoon while passing this nest I noticed egg shells scattered about, and upon examination I found that some of the eggs had undoubtedly hatched naturally but others showed signs of violence. It was evident that a crow had discovered the nest early that morning just as the eggs were hatched and destroyed a portion of them. I believe he got away with the whole brood as no small covey of birds was noticed during the summer or fall in that vicinity.

In breaking up an old field another nest was found and left undisturbed by turning the plow away from it. I saw the female on the nest several times after the field was plowed, on the little patch of sod not more than two feet square that had been left. Desiring to photograph the nest one day I went to it at 9 o'clock in the morning and found the old bird incubating. Two hours afterward when I returned with the photographer the bird was gone and not an egg in the nest, and not the slightest evidence that a set had ever been there;—no broken shells, no particles of yolks, and stranger yet no trace of man or beast, which would have readily shown in the soft plowed ground about the nest. What became of the eggs is to this day a mystery.

Two nests with complete sets were destroyed in clearing and burning some scrub lands, and the eggs of two other nests disappeared when they contained 4 and 11 eggs respectively, making only one successful nesting out of the seven. However the fall showed full covies of birds everywhere in abundance.

Wilson's Plover

By Henry Thurston



THE permanent impression left upon one's mind by the different species of birds seen on a trip to a distant point where the life met with is strange to the observer, demands a good deal upon the circumstances under which the new avian friends are encountered. Many of these meetings, however striking at the time, do not seem to take a firm hold, and though not forgotten entirely, finally give place in one's thoughts to the memory of some bird that at first meeting did not appear very imposing, but which found a warm spot by daily association, and secured the central place in one's stories when he settles down to review his many experiences.

In Florida, on my first trip to that bird wonder-land, I was fortunate enough to meet most of the native species that have been recorded as "nearly extinct." I well remember the thrill of pleasure with which I viewed, when suddenly rounding a clump of mangroves on the bank of a creek, a flock of Snowy Herons that were feeding in the slime and muck. The first I had seen! Also, the great joy with which I beheld two Roseate Spoonbills slowly circling over a distant marsh; and the awe felt upon surprising a flock of five thousand or more White Ibis that took wing with a noise like distant thunder as their dazzling black-tipped pinions clapped furiously over their backs. But marvelous as were these visions, there, too, I met for the first time a friendly little bird that had not the splendor of those named, but whose cheery whistle of welcome I think I miss more—the Bull-head or Wilson's Plover. Since then I have visited many beaches on the west coast of Florida in the spring and have usually been greeted by this bird as soon as I stepped on the sand. Blithely he comes along, with body held stiffly and slender legs twinkling so swiftly that it is nearly impossible to make them out.

Three months on the beach at Tampa Bay during the breeding season gave me a good opportunity to become fairly well acquainted with this Plover. The arrangement in the male of the black forehead band and one of the same color on the chest makes him quite a striking bird when viewed under certain lights, and in others exceedingly inconspicuous. Though not a protective colorationist to the extent of trying to fit the theory to anything and everything, I have been honored by having the laws expounded to me by the originator and have seen some striking examples where they work beautifully—(also some where they don't)—but the most convincing

I have yet observed was these Plovers on the blazing white sands of the beach. Many times they have run ahead of me along the sandy strip, perfectly visible, then suddenly turn and face me and, strain my eyes as I might, all I could distinguish would be a couple of ragged black streaks that might have been sticks protruding from the sand until closer approach identified them as the frontal and breast bands of the Plover, as he once more got under way. This seems to be a favorite occupation of these "Bull-heads" in the early spring, and one might easily imagine he was being shown the beauties of the beach by the little feathered guide. A few yards ahead he'll keep, legs twinkling merrily, pausing to run back and call if you stop, going ahead once more as you follow. How different in the breeding season!

Early one summer morning, to be exact, June third, I left a delightful house that was nestled amid live oak and camphor trees, to visit the beach, hoping to find a Plover's nest. The beach was a glistening stretch of purest white sand that edged a marsh and occasional patches of woods; not very wide, probably only a hundred feet at its greatest, and in many places the waters lapped the palmettos at high tide. The stretch was by no means a free one like some I had visited in other parts of the State, but was strewn with gaunt skeletons of trees that had been washed out and lay bleaching under the hot sun. Nature, however, had so arranged these barren trunks that they added rather than detracted from the beauty of the spot, and a hermit-like Kingfisher, that seemed to be the only one of its kind here, found them ideal perches.

As I approached this strip, seemingly from nowhere there appeared a female Plover, calling plaintively. Now I knew that the season of nesting had begun. She was soon joined by a male and another female that chorused with her their wishes for my departure. How she coaxed me to follow her! This I did for a time, trailing behind as she struggled along on one leg, the other crumpled under her. Tediously she kept ahead, calling—sobbing, I should have said—one of the most pathetic yet beautiful notes I have heard. Surely, if ever there was a picture of parental distress it was she. Finally, as though exhausted, she sank to the sand and lay on her side, gasping. The other two flew back and forth overhead whistling plaintively but she heeded them not, nor my approach, and lay there panting. I was sure now that she was tired by her exertion, and hurried to catch her, only to learn that she was "playing 'possum." She allowed me to almost touch her, and then fluttered off again. Evidently she was not satisfied that her nest was safe, and she tried new tactics this time. With seemingly broken wings that trailed as though helpless at her sides, she started down the beach and once more I followed after, but this time increased my speed. As I had about caught up with her she gave a joyous whistle, sprang into the air, and those

wounded wings carried her like a bullet around a point of wooded land and out of sight. She had accomplished her purpose, as I had hopelessly lost the place from which she started. Search as I might, and did, I could not find it. I surely think that Wilson's Plover would take the prize for fakers of forlorn birds.

After this incident I continued up the beach and chanced upon a mixed flock of Sandpipers, among which was a Red-backed. I wanted him for a specimen, so fired, and though at quite a distance managed to make my kill. As the others flew I thought I saw that I had made a double, and ran to end the misery of the wounded bird that was flopping about, only to find upon reaching the spot that it was another female Wilson's Plover doing the wounded act. This one I did not follow, for I knew that almost certainly the nest I wanted to photograph was near at hand, the report of my gun having probably frightened her from it. A little glancing around showed near-by a palmetto stub that had been ripped up, and this looked a likely spot. Sure enough, searching revealed the three eggs snuggled closely to the stump, resting in a small hole that had been scooped out in the sand and adorned with a few twigs. While I was photographing the eggs the parent birds kept up their calling, the female doing her best to lure me away.

I walked further up the beach after securing the picture, as I wished the mother to go back to her nest in order that I might observe how she slipped off without being seen. Now that I had the nest located it would be comparatively easy to watch that performance if, as I approached the stump, I kept the site in view. Scattered here and there over the beach were small flocks of Sandpipers, Least, Semi-palmated and occasional Spotted and Red-backs. Of course, the various Herons were fishing in promising tide pools, and several staid and solemn White or Wood Ibis lent dignity and interest to the scene.

Deciding that the Plover had had time to assure herself that no harm was done to the eggs, I turned back to the nest. On nearing the spot I cautiously approached the stump. As I got within a few yards the male, unobserved before as he was facing me and was therefore practically invisible, piped several notes. Swiftly and mouse-like the female glided from her treasures, crouching low beside the stump and did not stand erect until she reached the water's edge, where once more she performed her misleading tricks. If I had not kept the nest in view I certainly would not have seen her as she left it.

Wilson's Plover certainly shows great ingenuity in hiding its nest, and in the three months time I was on that beach I located only this one. The birds were numerous there and many more nests were surely hidden in the drift, but so well hidden that human eyes discovered them only by accident.

The Depredations of Cats on Muskeget Island

By G. K. Noble

TO me, there is no sight so inspiring, so thrilling, as a seabird colony at the height of its breeding season. The great clouds of shrieking, careening birds that hover overhead, the fuzzy little youngsters that scurry away from one's very feet, the nests with their treasures so carelessly exposed to view,—all possess some indescribable fascination.

Of the various colonies which now dot our Atlantic seaboard, Muskeget Island is especially noteworthy. Forty-five thousand birds, including the Common, Roseate and Arctic Terns, and the Laughing Gull, have assembled on this small island for the past few years. But now there has entered into this veritable paradise, slaughter and desolation. Thoughtless owners have abandoned their cats upon this land, leaving them to tear down the great work which the state of Massachusetts has erected.

It was during the early part of my stay upon the island that the gruesome sights were brought to my attention. Mother birds, their bodies partly eaten, appeared at every step. Nearly all had been killed while incubating, and their bodies still partly concealed their decaying eggs. Over one region of the island,—the extreme westerly part,—the Terns and Gulls have been completely exterminated. Evidences of their futile attempts to nest are shown in the white feathers and bleaching bones visible on all sides.

As the season wore on and the young hatched out, they also became the victims of the ruthless cats. It was a common sight to see, during one short walk across the island, half a hundred young, either dead or dying, with their heads cruelly lacerated and their wings crushed and bleeding. During this period, indeed, it seems that the cats killed the young birds simply for the mere sport of it. I remember that on July the eighteenth of this year, the day that we broke up camp and when out for a last look at the birds, during this short walk I picked up the bodies of over a dozen young. In each case only the head and breast was eaten. This was indeed an awful impression to carry away as my last remembrance of the island.

But this destruction does not go on entirely unchecked. Mr. George E. Coffin, the watchful warden, is an expert shot, and he uses his skill to good advantage. Still the scanty vegetation on the island offers the hunter little protection and puts stalking the cats out of the question. Three of the cats were brought down during our ten days stay by Mr. Coffin. Yet there is at least five times as many of these semi-wild cats left on the island.

Most of these cats were brought over ostensibly to drive the rats out of the hunters' shacks; but upon being left to themselves, they have become practically wild. The old spark of the tiger family has begun to glow within them, and the birds diminish season after season. It certainly seems a shame that there could not be some law enforced prohibiting the bringing of cats to Muskeget Island, Massachusetts.



The Bartramian Sandpiper—Is It Coming Back?

LAST May I heard that two or three pairs of Bartramian Sandpiper were seen on the old breeding grounds some twenty miles north of Bangor, Me. These birds bred there very abundantly twenty years and more ago, but have diminished and disappeared altogether for several years past. I visited the place on May 5th, during a deluge of rain, but succeeded in taking one nest with four eggs and the female parent. Photographing the nest *in situ* was out of the question on account of the downpour, which continued all day long. This set of four eggs is unusual in richness and beauty of coloring, all showing very large dark blotches, the like of which has not been seen in this species so far as I can learn, and the set has been examined by many expert oologists, including Mr. Edward Arnold. I thought at the time that this might be the last stand of the Bartramian Sandpiper in Eastern North America, but there is reason to hope that the bird may be on the increase, as it is known to have bred in New Jersey and Western New York last year. On August 1st of this year half a dozen were seen in Floral Park on the edge of the Hempstead plains. One was taken and is recorded in this issue of *THE WARBLER* among Long Island Bird Notes. Several were also seen at Flowerfield during the first two weeks of August.

Long Island Bird Notes

By Childs and Thurston

THE domestic sparrow seems to have decreased in number during the past few years. They are certainly much less abundant than they were ten or twenty years ago. May the good work go on.

That the carolina wren is becoming not an uncommon summer resident of Long Island is a joyful fact. It is only four years ago that I first heard its song during the breeding season; the past summer I have heard it frequently and at various places.

Mourning doves are unusually abundant about Smithtown and Flowerfield this season.

Starlings are ever with us in enormous numbers and there are less bluebirds and woodpeckers on their account. It is also possible that they help to keep down the domestic sparrow by driving them from their nesting sites. It is a wonder that other birds can find food enough to keep soul and body together where the greedy starling is so very abundant and eating everything, even to the berries of the red cedar. Doves, meadowlarks, quail, robins, flickers and grackles must find their usual food supply sadly depleted by the starling.

Warblers are not remarkable for their melody, yet the song of the black-throated green, in my judgement, ranks high among our native birds. It is to me fully as pleasing as the song of the hermit thrush. Anyone who will stop to give it consideration is bound to appreciate its merits and grow to love it very much.

I have remarked that in my judgement crows are the greatest enemy of small birds, especially during the breeding season. Continued observation does not change this belief. That they do infinitely more harm than good I firmly believe, for the number of eggs and young birds of small species which they devour is, I believe, equal to more than half of all the nesting failures that occur.

The *Long Island Agronomist* rejoices that the starling has become so abundant for the reason that grubs and bugs should grow less in numbers. It is true that the starling is credited with destroying cutworms, especially. It is also true that cutworms were never so abundant and destructive on Long Island as they have been during the last three or four years of the starling's superabundance.

Early in August grackles destroyed a field of dwarf sweet corn growing at Flowerfield. Much to their credit the starlings never touched it.

Migrant shrikes were unusually common at Floral Park during fall migration of 1912.

Another abundant visitor was the white-crowned sparrow. One flock that stayed a few days in the depths of a berry patch, numbered thirty individuals. A large number for a heretofore rare visitant.

It is always interesting to add a new species to one's local list. The past winter and spring brought five new to Floral Park. Namely: Bartramian sandpiper, bob-o-link, saw-whet owl, least flycatcher and chestnut-sided warbler.

The summer of 1913 brought back some old bird friends that have not reared broods in Floral Park for some time. These were the bobwhite, orchard oriole and mourning dove.

The shore birds were unusually plentiful on Long Island during this year's spring migration. Though Long Island gets a goodly variety in the fall, the number seen in the spring heretofore has been few and not much of an assortment. On May 30th, a flock of 800 to 1,000 black-bellied plover were observed at Freeport; also large flocks of semi-palmated and least sandpiper and turnstones. A pair each of pectoral sandpipers and dowitchers were observed at same locality.

An acadian sharp-tailed sparrow was collected at Freeport on May 30, 1913. A beautiful male in full breeding plumage.

Mr. Thurston saw half a dozen bartramian sandpipers at Floral Park on August 1st. One was taken—a fine young male, also one on the 9th.



Howard S. Boyle of Elmhurst, L. I., writes: "While examining the American Museum's Collection of Greater Redpolls (*Acanthis linaria rostrata*) I found a specimen that was taken on Long Island. This was in the Wm. Dutcher collection, and was taken at Shelter Island, Feb., 11, 1879, adult by W. Worthington. As there is no question of the identity of the specimen it is the first record from Long Island."

Notes Extending Dates of Arrival and Departure of Certain Species on Long Island

By Henry Thurston

DR. A. H. HELME, who has probably made a larger collection of Long Island birds than any other ornithologist working in this region, recently placed the bulk of the same with the collection of Dr. Jonathan Dwight at the American Museum of Natural History. In checking up the skins I saw that some were taken at times earlier or later in the season than had heretofore been recorded, and give same below together with a few personal records of interest. This I am able to do by the courtesy of Dr. Helme, who collected the birds recorded from his collection, and of Dr. Dwight in whose hands they are at present.

Redbreasted Merganser—A male Redbreasted Merganser was seen at Freeport by writer on the 30th of May, 1913. He circled over the boat twice, giving me a fine chance to see his beautiful nuptial plumage.

Pintail—An apparently unrecorded winter Pintail turned up in process of re-labeling the collection of Dr. Dwight. This bird was collected at Montauk Point on February 27, 1901.

Pectoral Sandpiper—Early and late records of Long Island shore birds are few and far between as it seems they have been neglected more than inland species that are easily reached. The following was found in the Helme collection—one collected at Miller Place October 25, 1890.

On the 30th of May, 1913, at Freeport, I observed two Pectoral Sandpipers; both were closely approached and their call heard.

Least Sandpiper—On the 30th of May at Freeport large flocks of Least Sandpipers were seen. During the day several flocks totalling easily 500 birds were observed. Baymen told me Oxeyes were unusually common—"in fact all snipes were this spring"—and observation on the flats and meadows certainly verified this remark.

Solitary Sandpiper—My earliest record for the Solitary Sandpiper is one collected May 10th, 1911, at Flowerfield.*

In Mr. Helme's collection are several birds that extend fall dates, collected Nov. 2nd, 1889, at Miller Place, L. I., also one Oct. 8th, 1896, Middle Island.

Black-bellied Plover—Another surprise May 30th, 1913, held in store for me in way of migratory shore birds, at Freeport, was a flock of Beetleheads that numbered between 800 and 1,000 birds. This was a larger

* See Auk XXVII, p. 276.

gathering of Black-bellied Plover than I have ever seen in the fall at the same place, and in full breeding plumage made a beautiful sight feeding on the flats.

Marsh Hawk—Several skins of the Marsh Hawk collected late in the year are also found among Mr. Helme's skins namely, Oct. 4th-17th-23rd, and Dec. 7th, Miller Place, L. I.

Cooper's Hawk—I find skins of the Cooper's Hawk collected by Mr. Helme that give winter records for Long Island, viz: Miller Place—Oct. 8th, Nov. 14th, Jan. 30th, Feb. 6th.

Yellow-billed Cuckoo—in Mr. Helme's collection I found an interesting skin of this species. The label gives the date as Nov. 2, 1898, Miller's Place. This is by far the latest date for this bird on Long Island.

Chimney Swift—Chimney Swifts reached Long Island early this year, arriving at Floral Park on the 26th of April, 1913.

Crested Flycatcher—A late date for the Crested Flycatcher is a bird of Mr. Helme's collected at Miller Place October 2, 1895.

Cowbird—Mr. Helme's collection contains two interesting dates of the Cowbird. One collected March, 13, 1890, at Miller Place, makes a new date of arrival for it on Long Island. Another December 3, 1892, at Miller Place, furnishes a winter record.

Baltimore Oriole—The Baltimore Oriole was also an early arrival this spring. Miss A. R. King, of Floral Park, a careful observer and teacher of nature study, saw one near her school at Queens, L. I., on the 28th of April, 1913.

Purple Finch—Several winter dates of Purple Finch also turned up in course of going over Mr. Helme's birds, viz.: Miller Place, L. I., January 29, 1904. Also January 30, February 3-8, December 31.

Snowflake—Mr. Helme's collection contains a Snowflake collected on Oct. 26, 1900, at Montauk—which seems to be an early date for fall arrival.

Acadian Sharp-tailed Sparrow—An adult breeding male of this species was collected by me at Freeport on May 30th, 1913.

Fox Sparrow—While quoting winter records it might be well to note a couple of Fox Sparrows collected by Mr. Helme at Miller Place Jan. 31, 1888, Dec. 14, 1895.

Blackpoll Warbler—A skin of the Blackpoll turns up in Helme collection that extends its date for staying on Long Island. This skin was taken Oct. 29th, 1891, at Miller Place.

Prairie Warbler—in Dr. Wright's collection I found a Prairie Warbler skin bearing date of Oct. 1st. 1896. Strange to say Dr. Brasilen's latest date seems to be Sept. 11th, which to me seems quite early for the last to leave.

Pipit—Mr. Helme collected a Pipit at Miller Place on May 8th, 1893, which seems quite late for one to stay on Long Island.

Mockingbird—A heretofore apparently unrecorded Long Island capture of the Mockingbird turned up in course of labeling a tray of Dr. Dwight's skins. It was taken at Ft. Hamilton October 1, 1890.

Catbird—Another Long Island winter record is Mr. Helme's skin, No. 955, collected at Miller Place January 20, 1886.

Wood Thrush—I got my earliest Long Island Wood Thrush record this year at Floral Park, April 26, 1913. I had a good chance to observe him closely, which made it unnecessary to kill it for a record.

Mr. Helme's collection contains a skin collected at Miller Place May 1, 1893.



Another breeding record for Flowerfield is the Sharp Shinned Hawk. A brood of young birds was observed flying about (near the nest tree where they were evidently reared) on August 12th. See WARBLER, Vol. VI, 1910, for full list of breeding birds of Flowerfield.

Long Island Notes

By John Treadwell Nichols and Robert Cushman Murphy

SINCE the publication of an annotated list of the birds of Long Island in the Abstracts of the Linnean Society of New York, by Dr. William C. Braisl in 1907, we have noted or found reference in our notes to various of the species on earlier or later dates than the extremes given in Dr. Braisl's paper. For the sake of the study of Long Island avifauna, it seems important that such data should be published. We hope that others will follow our example in recording such occurrences. The following list contains migration data with regard to the land birds, together with a few additional notes.

Colinus virginianus virginianus. Bob-white. Not confined to the uplands, but commonly observed on the Sound beaches during autumn and winter. A large flock was flushed on the beach at Mt. Sinai, November 4, 1906.

Falco columbarius columbarius. Pigeon Hawk. One taken December, 31, 1903, at Mt. Sinai. Winter records are interesting.

Sphyrapicus varius varius. Yellow-bellied Sapsucker. Far Rockaway, April 25th, 1896. In the fall migration an early record is, Far Rockaway, September 21. One winter record, a bird seen at Wading River, December 27, 1906.

Melanerpes erythrocephalus. Red-headed Woodpecker. Far Rockaway, November 28.

Archilocus colubris. Ruby-throated Hummingbird. Three birds, Mt. Sinai, May 3, 1905. Far Rockaway, September 23.

Tyrannus tyrannus. Kingbird. Late autumn dates, Far Rockaway, September 20 to October 9.

Empidonax traillii alnorum. Alder Flycatcher. In the American Museum of Natural History's collections are three specimens which struck the Fire Island lighthouse in August, 1898, presented by William Dutcher; and one collected at Mt. Sinai, September 16, 1907, by R. C. Murphy.

Empidonax minimus. Least Flycatcher. Mt. Sinai, May 5, 1905.

Sturnus vulgaris. European Starling. First seen at Syosset in 1906, Miller Place, 1907. Although reported from further east on the north shore on an earlier date, first seen at Mastic in 1912. About 200 birds on the meadows at the same place in 1913.

Icterus galbula. Baltimore Oriole. Far Rockaway, a single bird seen October 7.

Euphagus carolinus. Rusty Blackbird. A flock at Mt. Sinai, March 14, 1906.

Loxia leucoptera. White-winged Crossbill. Port Jefferson, October 29, 1906. Large flight at Miller Place, November 4, of the same year. Of two young males killed November 6, and determined as such by examination of skulls, one was in red plumage.

Spinus pinus. Pine Siskin. Far Rockaway, October 10, 1896. Far Rockaway, May 8 or 9, 1897. Mt. Sinai, May 29, 1907, numerous.

Plectrophenax nivalis nivalis Snow Bunting. Far Rockaway, October 31, 1896.

Passerherbulus c. caudaculus. Sharp-tailed Sparrow. The song of this species is quite different from that of the Seaside Sparrow,—less definite, less frequently uttered, and more prolonged; a series of trills or buzzes. Young birds, which are common on the meadows in late July, have much buff about the head, buffy unmarked underparts, with indications of streaks on the sides of the breast.

Passerherbulus maritimus maritimus Seaside Sparrow. The husky song of this species is frequently uttered, short and definite. It varies somewhat, and may be indicated by syllables *littlegozee*, *tomorro* or *lookingformee*. Young birds, common on the meadows in late July, have besides the yellowish loral mark of the adult an indefinite, buffy, postocular stripe, white throats, and a band of marking across the breast.

Zonotrichia leucophrys leucophrys. White-crowned Sparrow. Far Rockaway, September 25, 1895.

Zonotrichia albicollis. White-throated Sparrow. Far Rockaway, September 16.

Spizella monticola monticola. Tree Sparrow. Far Rockaway, October 24, 1895.

Spizella passerina passerina. Chipping Sparrow. Far Rockaway, November.

Junco hyemalis hyemalis. Junco. Far Rockaway, September 20.

Passerella iliaca iliaca Fox Sparrow. Occasionally winters. Two at Wading River, December 27, 1906. One at Merrick, February 10, 1908.

Zamelodia ludoviciana. Rose-breasted Grosbeak. Far Rockaway, August 28, 1896.

Hirundo erythrogaster. Barn Swallow. Far Rockaway, September 30.

Iridoprocne bicolor Tree Swallow. Far Rockaway, May 30, 1899. Far Rockaway July 7. Mastic, May 31 and July 4, 1912, June 30, 1913. Mt. Sinai, November 3, 1906. Far Rockaway, November 2-4.

Stelgidopteryx serripennis. Rough-winged Swallow. Cold Spring Harbor, one seen July 12, 1906.

Laniivireo solitarius solitarius. Blue-headed Vireo. Far Rockaway, September 22-26, 1898.

Mniotilla varia Black-and-white Warbler. Far Rockaway, October 9.

Helminthophaila lawrencei. Lawrence's Warbler. Syosset, one seen July 31, 1906.

Compsothlypis americana usneæ. Parula Warbler. Far Rockaway, April 25, August, 23, and October 24. It does not breed here. Breeds at Cold Spring Harbor, and more commonly at St. James and Mastic.

Dendroica coronata. Myrtle Warbler. Far Rockaway, September 14. Average fall arrival September 29.

Dendroica magnolia. Magnolia Warbler. Far Rockaway, August 17.

Dendroica pennsylvanica. Chestnut-sided Warbler. Far Rockaway, August 25.

Dendroica striata. Black-poll Warbler. St. James, May 3, 1906, two birds. Far Rockaway, June 18, 1896. Far Rockaway, October 24.

Dendroica virens. Black-throated Green Warbler. Far Rockaway, April 29 to May 14, September 23 to October 1. Breeds commonly on the north shore from Oyster Bay eastward.

Dendroica discolor. Prairie Warbler. Far Rockaway, September 28, 1897.

Seiurus aurocapillus. Ovenbird. Far Rockaway, October 6.

Seiurus novaboracensis novaboracensis. Northern Waterthrush. Far Rockaway, May 30; arrive in fall migration July 24 to 28. Only one record after October 6, a bird seen October 22, 1899.

Wilsonia pusilla pusilla. Wilson's Warbler. Mt. Sinai, a few seen May 31, 1907.

Wilsonia canadensis. Canadian Warbler. Far Rockaway, August 8.

Setophaga ruticilla. Redstart. Mt. Sinai, May 2, 1905, common on May 3. Far Rockaway, October 1.

Anthus rubescens. Titlark. Far Rockaway, December 5.

Mimus polyglottos polyglottos. Mockingbird. Far Rockaway, one seen September 6, 1896.

Dumatella carolinensis. Catbird. Far Rockaway, November 7.

Toxostoma rufum. Brown Thrasher. Far Rockaway, April 25.

Troglodytes aedon aedon. House Wren. Stony Brook Harbor, May 3, 1906.

Certhia familiaris americana. Brown Creeper. Mt. Sinai, April 29. Far Rockaway, arrive September 22 to 30.

Regulus satrapa satrapa. Golden-crowned Kinglet. Far Rockaway, September 21. Far Rockaway, April 15, 1899.

Regulus calendula. Ruby-crowned Kinglet. Far Rockaway, October 22.

Hylocichla mustelina. Wood Thrush. Mt. Sinai, May 3, 1906.

Hylocichla ustulata swainsoni. Olive-backed Thrush. Far Rockaway, May 20, 1899.

N. Hollister

The Warbler

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1905

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